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# MARINE CORPS

## CONCEPTS AND ISSUES



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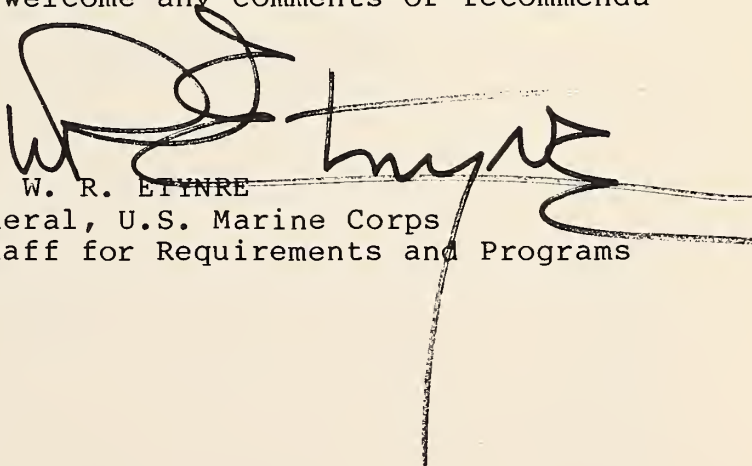
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## INTRODUCTION

Concepts and Issues is a ready reference on matters that affect the future of the Marine Corps. It has grown into a single source document for presenting the framework and substance of the Marine Corps' program.

The content flows from development of the Program Objective Memorandum (87-91), and is the product of iterative Headquarters Staff input. It is not all-inclusive and much of the information is time-sensitive. Although this edition does not express official Marine policy or doctrine, it does address the geopolitical realities and national interests that influence our structure and capability. This year's edition has been expanded beyond discussion of critical requirements and programs to include issues related to investments in quality of life, ammunition procurement, training and national security objectives.

This document is designed to serve as an annual presentation of our continuing efforts to examine future requirements and to invest in a capable and sustainable Fleet Marine Force. Our readiness, flexibility of response and past performance have justified a significant level of support from the national leadership. The Marine Corps continues to be dedicated to providing sound leadership and stewardship worthy of the trust and confidence placed in us. I hope Concepts and Issues contributes to this objective and will be useful to you, and welcome any comments or recommendations you may have.



W. R. EYNRE

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## TABLE OF CONTENTS

### Section I

#### THE MARINE CORPS' CONTRIBUTION TO NATIONAL SECURITY

Introduction.....	I-1
National Requirements.....	I-2
Maritime Strategy.....	I-6
Amphibious Contributions to the Maritime Strategy.....	I-9
Mission, Functions and Organization of the Corps.....	I-12
Maritime and Land Prepositioning.....	I-14
Deployment Issues.....	I-17
The Marine Corps Today.....	I-21

### Section II

#### MANPOWER AND QUALITY OF LIFE

Introduction.....	II-1
End Strength.....	II-2
Recruiting and Retention.....	II-3
Military Construction Program.....	II-5
Bachelor Enlisted Housing.....	II-6
Family Housing.....	II-7

### Section III

#### INVESTMENTS IN A MODERNIZED MAGTF

##### Part 1

#### GROUND COMBAT ELEMENT

Introduction.....	III-1
Mk-19 MOD 3 40mm Machine Gun.....	III-2
M249 5.56mm Squad Automatic Weapon.....	III-3
Shoulder-Launched Multipurpose Assault Weapon (SMAW).....	III-4
M1A1 Main Battle Tank (MBT).....	III-5
M252 Improved 81MM Mortar.....	III-6
Light Armored Vehicle (LAV).....	III-7
Landing Vehicle Tracked, LVT7A1.....	III-8
M-198 155mm Howitzer.....	III-9
TOW-2 Missile Program.....	III-10
Modular Universal Laser Equipment (MULE).....	III-11
Ground Launched Remotely Piloted Vehicle (RPV).....	III-12
M-9 9mm Beretta Pistol.....	III-13
M60E3 Lightweight 7.62mm Machine Gun.....	III-14
M16A2 Rifle.....	III-15
General Support Rocket System (GSRS).....	III-16
Dragon PIP.....	III-17
Battery Computer System (BCS).....	III-18
Armored Vehicle Launched Bridge (AVLB).....	III-19

## Part 2

### AVIATION COMBAT ELEMENT

Introduction.....	III-20
AV-8B.....	III-21
F/A-18.....	III-22
CH-53E.....	III-23
A-6E.....	III-24
EA-6B.....	III-25
AH-1T+.....	III-26
MV-22A.....	III-27
GAU 12/U 25mm Gun.....	III-28
Laser Maverick AGM-65E.....	III-29
GATOR.....	III-30
HELLFIRE.....	III-31
SIDEARM.....	III-32
Hawk Missile System.....	III-33
STINGER.....	III-34
Tactical Air Operations Module.....	III-35
AN/TPS-59 Radar.....	III-36
Aviator's Night Vision System (ANVIS) AN/AVS-6.....	III-37
Have Quick Anti-Jam Communications.....	III-38
Contingency Support Package (CSP).....	III-39
10 Day Fly-in "0" Level Support Packages.....	III-40

## Part 3

### COMBAT SERVICE SUPPORT ELEMENT

Introduction.....	III-41
Ground Ammunition Program.....	III-42
Marine Corps Expeditionary Shelter System (MCESS).....	III-44
Intermediate Size Containers (Inserts, PALCONS, & QUADCONS).....	III-45
Medium Tactical Truck.....	III-46
Logistic Vehicle System .....	III-47
70-ton Heavy Equipment Transporter.....	III-48
Crash/Fire/Rescue Vehicle (C/F/R).....	III-49
Lightweight Amphibious Container Handler (LACH).....	III-50
Rough Terrain Container Handler (RTCH).....	III-51
Wet and Dry Gap Bridging.....	III-52
Fuel/Water Storage and Pump Modules (SIXCONS).....	III-53
Reverse Osmosis Water Purification Unit (ROWPU) Enhanced....	III-54
Tactical Steam Cleaner.....	III-55
Tactical Fuel System.....	III-56
Small Employment Excavator (SEE).....	III-57
High Mobility Multipurpose Wheeled Vehicle.....	III-58

## Section IV

### C<sup>4</sup> AND INTELLIGENCE

## Part 1

### COMMAND, CONTROL, COMMUNICATIONS AND COMPUTERS (C<sup>4</sup>)

Introduction.....	IV-1
Position Location Reporting System (PLRS).....	IV-2

NAVSTAR Global Positioning System (GPS).....	IV-3
Marine Integrated Fire and Air Support System (MIFASS).....	IV-4
Joint Tactical Information Distribution System (JTIDS).....	IV-5
Digital Communications Terminal (DCT).....	IV-6
Single Channel Ground and Airborne Radio Sub-System (SINCGARS).....	IV-7
Tactical Communication Center (TCC).....	IV-8
High Frequency Communication Terminal (HFCT).....	IV-9
TRI-TAC Switches.....	IV-10
Troposcatter Radio, AN/TRC-170(V)3.....	IV-11
Deployable MAGTF Automated Services Center.....	IV-12
Automated Data Processing Equipment for the Supporting Establishment (ADPE-SE) .....	IV-13
Central Processing Unit (CPU) Augmentation Program.....	IV-14
End User Computing (EUC) Equipment.....	IV-15

## Part 2

### INTELLIGENCE

Introduction.....	IV-16
Intelligence Analysis Center (IAC).....	IV-17
All Source Imagery Processor (ASIP).....	IV-18
Forward Pass.....	IV-19
Integrated Signals Intelligence System (ISIS).....	IV-20
Electronic Intelligence (ELINT) Support System.....	IV-21
Advanced Marine Airborne Signals Intelligence (SIGINT) System (AMASS).....	IV-22
Team Portable Communications Intelligence (COMINT) System (TPCS).....	IV-23
Mobile Electronic Warfare Support System (MEWSS).....	IV-24
Team Portable Direction Finder (TPDF) PIP.....	IV-25
Tactical Intelligence Management System (TIMS).....	IV-26
Counterintelligence and Security (CI&S) Program.....	IV-27
Lightweight Battlefield Surveillance Radar (LBSR).....	IV-28
Tactical Remote Sensor System (TRSS).....	IV-29

## Section V

### NAVY PROGRAMS AND SUPPORT

Introduction.....	V-1
Amphibious Lift.....	V-2
WASP Class (LHD 1).....	V-3
WHIDBEY ISLAND Class (LSD 41).....	V-4
LCAC.....	V-5
Naval Surface Fire Support.....	V-6
Strategic Sealift Requirements.....	V-7
Maritime Prepositioning Ship.....	V-8

Aviation Logistics Support Ship (TAVB).....	V-9
Medical Support.....	V-10
TAH Hospital Ships to Support Contingency Operations.....	V-11
Navy Fleet Hospitals.....	V-12
Advance Base Functional Components (ABFC).....	V-13

## Section VI

### THE MARINE CORPS RESERVE

Total Force and the Reserves' Vital Contribution.....	VI-1
Status of Program.....	VI-2
Training and Readiness.....	VI-3
Conclusion.....	VI-4

## Section VII

### TRAINING

Introduction.....	VII-1
Computer-Assisted Systems Approach to Training.....	VII-4
Training Requirements and Resource Management System.....	VII-5
Instructional Management System.....	VII-6
Tactical Decision Making Aids.....	VII-7
Training Range Development.....	VII-8
Weapon/Equipment Simulation Devices.....	VII-9
Development of Individual Training Standards.....	VII-10
Combat Environment Simulation Devices.....	VII-11

### APPENDIX

Marine Corps Tactical Force Organization.....	A
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## GLOSSARY OF ACRONYMS

AAAV	ADVANCED ASSAULT AMPHIBIAN VEHICLE
ABFC	ADVANCE BASE FUNCTIONAL COMPONENTS
ACE	AVIATION COMBAT ELEMENT
ADAM	AREA DENIAL ARTILLERY MUNITION
ADP	AUTOMATED DATA PROCESSING
AE	ASSAULT ECHELON
AFOE	ASSAULT FOLLOW-ON ECHELON
AFQT	ARMED FORCES QUALIFICATION TEST
AIS	AUTOMATED INFORMATION SYSTEM
AMASS	ADVANCED MARINE AIRBORNE SIGNAL INTELLIGENCE SYSTEM
ANVIS	AVIATOR NIGHT VISION SYSTEM
AOA	AMPHIBIOUS OBJECTIVE AREA
APPN	APPROPRIATION
ASIP	ALL SOURCE IMAGERY PROCESSOR
ASW	ANTI-SUBMARINE WARFARE
AVLB	ARMORED VEHICLE LAUNCHED BRIDGE
BCS	BATTERY COMPUTER SYSTEM
BEQ	BACHELOR ENLISTED QUARTERS
BLT	BATTALION LANDING TEAM
CASAT	COMPUTER ASSISTED APPROACH TO TRAINING
CAX	COMBINED ARMS EXERCISE
C4	COMMAND, CONTROL, COMMUNICATIONS AND COMPUTERS
CBTZ	COMBAT ZONE
CE	COMMAND ELEMENT
CI	COUNTERINTELLIGENCE
CINC	COMMANDER-IN-CHIEF
CINCLANTFLT	COMMANDER-IN-CHIEF ATLANTIC FLEET
CINCPACFLT	COMMANDER-IN-CHIEF PACIFIC FLEET
COMINT	COMMUNICATIONS INTELLIGENCE
COMMZ	COMMUNICATIONS ZONE
CASAT	COMPUTER ASSISTED APPROACH TO TRAINING
CONUS	CONTINENTAL UNITED STATES
CRAF	CIVILIAN RESERVE AIR FLEET
CSP	CONTINGENCY SUPPORT PACKAGE
CSSE	COMBAT SERVICE SUPPORT ELEMENT
CVBG	CARRIER BATTLE GROUP
CY	CALENDAR YEAR
DCT	DIGITAL COMMUNICATIONS TERMINAL
DECM	DEFENSIVE ELECTRONIC COUNTERMEASURES
DEP	DELAYED ENTRY POOL
DF	DIRECTION FINDING
DOD	DEPARTMENT OF DEFENSE
DON	DEPARTMENT OF NAVY
ECCM	ELECTRONIC COUNTER COUNTERMEASURES
ECM	ELECTRONIC COUNTERMEASURES
ELINT	ELECTRONIC INTELLIGENCE
ESM	ELECTRONIC WARFARE SUPPORT MEASURES
EW	ELECTRONIC WARFARE
FAAD	FORWARD ANTI-AIR DEFENSE
FDC	FIRE DIRECTION CENTER
FIE	FLY-IN ECHELON
FMF	FLEET MARINE FORCE



## GLOSSARY OF ACRONYMS (CONTINUED)

FMFLANT	FLEET MARINE FORCE ATLANTIC
FMFPAC	FLEET MARINE FORCE PACIFIC
FSSG	FORCE SERVICE SUPPORT GROUP
FTS	FULL TIME SUPPORT
FY	FISCAL YEAR
FYDP	FIVE YEAR DEFENSE PROGRAM
GCE	GROUND COMBAT ELEMENT
GPH	GALLONS PER HOUR
GSRS	GENERAL SUPPORT ROCKET SYSTEM
HET	HEAVY EQUIPMENT TRANSPORTER
HFCT	HIGH FREQUENCY COMMUNICATIONS TERMINAL
HQMC	HEADQUARTERS MARINE CORPS
HQ	HAVE QUICK
HMMWV	HIGH MOBILITY MULTIPURPOSE WHEELED VEHICLE
HP	HORSEPOWER
HUMINT	HUMAN INTELLIGENCE
IMA	INTERMEDIATE MAINTENANCE ACTIVITY
IMINT	IMAGERY INTELLIGENCE
IMS	INSTRUCTIONAL MANAGEMENT SYSTEM
IOC	INITIAL OPERATING CAPABILITY
IR	INFRARED
IRR	INDIVIDUAL READY RESERVE
ISIS	INTEGRATED SIGNALS INTELLIGENCE SYSTEM
ISO	INTERNATIONAL ORGANIZATION FOR STANDARDIZATION
JCS	JOINT CHIEFS OF STAFF
JINTACCS	JOINT INTEROPERABILITY TACTICAL COMMAND AND CONTROL SYSTEM
JTIDS	JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM
LAAM	LIGHT ANTI-AIR MISSILE
LACH	LIGHTWEIGHT AMPHIBIOUS CONTAINER HANDLER
LAV	LIGHT ARMORED VEHICLE
LBSR	LIGHTWEIGHT BATTLEFIELD SURVEILLANCE RADAR
LCAC	LANDING CRAFT AIR CUSHION
LHD	AMPHIBIOUS ASSAULT SHIP (MULTI-PURPOSE)
LSD	DOCK LANDING SHIP
LVS	LOGISTIC VEHICLE SYSTEM
MAB	MARINE AMPHIBIOUS BRIGADE
MAF	MARINE AMPHIBIOUS FORCE
MAG	MARINE AIRCRAFT GROUP
MAGIS	MARINE AIR GROUND INTELLIGENCE SYSTEM
MAGTF	MARINE AIR GROUND TASK FORCE
MASC	MARINE AUTOMATED SERVICE CENTER
MAU	MARINE AMPHIBIOUS UNIT
MAWTS	MARINE AVIATION WEAPONS AND TACTICS SQUADRON
MBT	MAIN BATTLE TANK
MCAGCC	MARINE CORPS AIR-GROUND COMBAT CENTER
MCAS	MARINE CORPS AIR STATION
MCCDPA	MARINE CORPS CENTRAL DESIGN AND PROGRAMMING ACTIVITY
MCESS	MARINE CORPS EXPEDITIONARY SHELTER SYSTEM
MEWSS	MOBILE ELECTRONIC WARFARE SUPPORT SYSTEM
MGB	MEDIUM GIRDER BRIDGE
MIFASS	MARINE INTEGRATED FIRE AND AIR SUPPORT SYSTEM

## GLOSSARY OF ACRONYMS (CONTINUED)

MMROP	MARINE MID-RANGE OBJECTIVES PLAN
MPS	MARITIME PREPOSITIONING SHIPS
MSC	MILITARY SEALIFT COMMAND
MULE	MODULAR UNIVERSAL LASER EQUIPMENT
NATO	NORTH ATLANTIC TREATY ORGANIZATION
NBC	NUCLEAR, BIOLOGICAL AND CHEMICAL
NCA	NATIONAL COMMAND AUTHORITY
NM	NAUTICAL MILE
NSFS	NAVAL SURFACE FIRE SUPPORT
NTPF	NEAR TERM PREPOSITIONING FORCE
OTH	OVER THE HORIZON
PAA	PROGRAMMED AIRCRAFT AUTHORIZATION
PIP	PRODUCT IMPROVEMENT PROGRAM
PLRS	POSITION LOCATION REPORTING SYSTEM
POL	PETROLEUM, OIL AND LUBRICANTS
POM	PROGRAM OBJECTIVE MEMORANDUM
PSI	POUNDS PER SQUARE INCH
R&D	RESEARCH AND DEVELOPMENT
RAAM	REMOTE ANTIARMOR MUNITION
RAP	ROCKET ASSISTED PROJECTILE
RASC	REGIONAL AUTOMATED SERVICE CENTER
RHA	ROLLED HOMOGENEOUS ARMOR
RO/RO	ROLL-ON/ROLL-OFF
ROWPU	REVERSE OSMOSIS WATER PURIFICATION UNIT
RPV	REMOTELY PILOTED VEHICLE
RRF	READY RESERVE FLEET
SAAS	STAND ALONE ANALYSIS SUB-SYSTEMS
SAW	SQUAD AUTOMATIC WEAPON
SECNAV	SECRETARY OF THE NAVY
SEE	SMALL EMPLOYMENT EXCAVATOR
SIGINT	SIGNAL INTELLIGENCE
SINGARS	SINGLE CHANNEL GROUND-AIRBORNE RADIO SYSTEM
SLEP	SERVICE LIFE EXTENSION PROGRAM
SLOC	SEA LINES OF COMMUNICATIONS
SMAW	SHOULDER LAUNCHED MULTIPURPOSE ASSAULT WEAPON
SMCR	SELECTED MARINE CORPS RESERVE
T/E	TABLE OF EQUIPMENT
TACAIR	TACTICAL AIR
TACC	TACTICAL AIR COMMAND CENTER
TACDM	TACTICAL DECISION MAKING AIDS
TAOM	TACTICAL AIR OPERATIONS MODULE
TAVB	AVIATION LOGISTICS SUPPORT SHIP
TCC	TACTICAL COMMAND CENTER
TENCAP	TACTICAL EXPLOITATION OF NATIONAL CAPABILITIES
TERPES	TACTICAL ELECTRONIC RECONNAISSANCE PROCESSING AND EVALUATION SYSTEM
TIMS	TRAINING INFORMATION MANAGEMENT SYSTEM
TRMS	TRAINING REQUIREMENTS AND RESOURCE MANAGEMENT SYSTEM
TWSEAS	TACTICAL WARFARE SIMULATION, EVALUATION AND ANALYSIS SYSTEM
ULCS	UNIT LEVEL CIRCUIT SWITCH
VSTOL	VERTICAL SHORT TAKE OFF AND LANDING



## SECTION I

### THE MARINE CORPS' CONTRIBUTION TO NATIONAL SECURITY

This section presents papers dealing with national security requirements and strategy. The papers highlight the Marine Corps unique contributions to the Nation's total capability. This section summarizes the basis for a primarily maritime-based military strategy and postulates the utility of Marine forces as critical to its successful execution. The chapter's framework begins with a review of issues affecting our national strategy, narrows to a brief explanation of the Maritime Strategy, and provides rationale and examples of how the Marine Corps, in concert with the Navy, offers significant options to our country in every potential contingency. Finally, the section titled "The Marine Corps Today" details the current posture of the Corps and summarizes how the Marines are preparing for future commitments through assessments of present capabilities and aggressive modernization efforts.





## NATIONAL REQUIREMENTS

The security challenges and the military posture of the United States are global in nature and are predicated on long-standing political commitments and economic realities. In theory, the U.S. military provides the National Command Authority (NCA) with a spectrum of options with sufficient flexibility to respond effectively and appropriately to any threat.

The modern international setting is threatened by the spectre of continuous political and economic uncertainty. International relationships are often characterized by tensions which go beyond the ability of one country to control. These tensions will be further increased by:

- Competition for limited resources,
- Expansion of state-sponsored terrorism
- Political instability of emerging third world countries,
- Violent revolutionary movements,
- Proliferation of sophisticated weaponry,
- Continued Soviet military expansion and sponsorship of anti-democratic insurgent movements.

There are many regional areas of concern, each with their own scenarios and considerations. Instability in the third world is a reality for the remainder of this century but perhaps is not the crucial threat to the West. As the Soviet Union, through its clients and surrogates, continues to attempt to expand its influence and to weaken U.S. efforts to seek peaceful resolution in unstable areas, we must strive to deter violence or to limit conflict once it occurs. As insurgency and internal strife grow out of the social, economic and political problems of the world, resources and lines of communication determined vital to this nation's interest are threatened. In turn, the adequacy of the military posture of this country is measured against our ability to deter, or contain, these threats.

The implications for U.S. forces are clear. Our military force levels must be adequate to deter or confront a wide range of challenges from terroristic behavior to full scale conventional warfare in remote regions of the world. Major ingredients to this strategy include rapid deployability and forward deployed forces.

The efficacy of our national strategy, which seeks first to deter aggression, is based upon a credible force projection capability. The national military strategy provides the means to project military power in support of national interests, wherever they are threatened. Force projection is, therefore, the key to the initial deterrence of aggression. Likewise, it is vital to the conduct of a successful forward defense should deterrence fail.



Two precepts of U.S military strategy-- deterrence and forward defense--place a premium on rapid deployability. They require that we have sufficient amounts of airlift and sealift, and of prepositioned materiel overseas, to maintain a credible deterrent while minimizing our presence in allied nations. They also require that we be able to move major combat forces rapidly to endangered areas, and to support them for as long as they are needed. As the scope of our security interests has grown and the threat of regional conflicts has increased, so too has the range of demands on our projection forces. The Navy/Marine Corps team fulfills this demand for credible force projection.

America's strategy for defense also stresses a reliance on forward deployed forces. U.S. interests and commitments require that we continue our substantial forward deployments in and around Europe, Northeast Asia and Southwest Asia. The proximity of Soviet forces to our allies and interests imposes severe demands on the timeliness of a military response. Forward deployed forces assist in deterring aggression by providing visible and convincing evidence of support. They increase our ability to respond effectively and in a timely manner. These forces discourage regional instabilities and provide a stable environment for diplomacy.

The Department of the Navy (DON), with direction from the Secretary of Defense and the NCA, has developed a naval program, the accomplishment of which will achieve maritime power, deter aggression and successfully defend our nation's foreign policy objectives. The genesis of this program is based on a maritime strategy that accepts the geographical and economic realities which have molded our nation's growth and development. These same realities will continue to impact upon our nation and affect the attainment of national goals and the formulation of our military forces.

The global maritime strategy, as articulated over the past four years by the Secretary of the Navy, is a broad statement of governing principles and naval objectives for goals mandated by our global national interests. The strategy has evolved into concepts for the global employment of naval forces to attain naval objectives. Most importantly, the maritime strategy is firmly rooted in specific geographical theaters and pointed against specific and explicit threat capabilities.

It was only 6 years ago that the Chief of Naval Operations testified to Congress that the U.S. Navy no longer enjoyed superiority at sea. He expressed the imbalance between our naval capability and the missions required by national policy in concise terms: "We are trying to meet a three-ocean requirement with a one-and-a-half-ocean Navy."

Four years ago the current administration submitted a naval recovery program that has guided strategic and programmatic action ever since. The program was based on President Reagan's commitment that, "maritime superiority is for us a necessity". This necessity is but one component of our national military strategy. Nevertheless, it is a fundamental requirement. The

growth of the Soviet Fleet into a global blue-water navy, has meant that no coalition defense based on global alliances could be executed without the rapid adoption of a naval strategy and a larger fleet to carry it out. The program put forward 4 years ago to achieve this was simple and well defined. It was built upon several elements:

- First, a more realistic strategy for the use of Navy/Marine Corps forces to maximize their deterrence in peacetime, and to prevail if deterrence fails.

- Second, the restoration of the quality, training, and morale of our personnel.

- Third, the restoration of the readiness of the Navy and Marine Corps through adequate maintenance, repair, spare parts, and support.

- Fourth, the establishment of a shipbuilding program to increase the force with the right type and mix of ships.

The global maritime strategy has been continuously refined and applied to training. It is a coherent and flexible strategy that represents a key component of our total national military strategy. It is also designed to incorporate not only Navy and Marine Corps forces, but is critically dependent on those of our sister services and the forces of our allies.

The utility of a broad maritime strategy, and the force mix to support it, has not been lost on the Soviet Union. In July, 1985, the Soviet Navy conducted the largest naval exercises ever conducted in the European theater. More than 100 naval combatants deployed in the Barents, Norwegian, and North Seas. The long-range use of BACKFIRES, medium and heavy bombers, and the employment of about 70 Soviet submarines in integrated surface, submarine, amphibious, and air exercises were observed. The nature of this exercise left little doubt that the Soviets seek to gain control of the northern flank of NATO immediately in the event of war.

In our own hemisphere, during 1984, the Soviets deployed a major surface task force, including the MOSKVA guided missile helicopter cruiser, a new UDALOY class guided missile destroyer, and a submarine to the Caribbean. This deployment was followed later in the year by another surface task force deployed to the Caribbean with a new SOVREMENNY class guided missile destroyer and four other ships. There are now regular deployments to the Caribbean by the new Soviet blue-water fleet. The most visible manifestation of their projection of maritime power into our hemisphere has been the near continuous off-loading of Soviet military hardware from East-Bloc ships in Nicaragua.

In the Pacific the Soviets now have a permanent fleet of more than 500 ships, including more than 130 submarines and two aircraft carriers. Their submarines are deployed regularly

among all of our exercises and astride all of our sea lanes. They know that the United States has become dependent for nearly half of its oil needs on the sea lanes and that, in fact, the U.S. is considerably more dependent on seaborne Alaskan oil than on Middle East oil. They are more aware than most Americans that our seaborne commerce with our Pacific trading partners now amounts to more than 130 percent of our commerce with our Atlantic trading partners.

In summary, there are no comforting trends in either the international arena or in Soviet capabilities. Optimistic assumptions about Soviet future intentions or behavior are not justified. Our interests will also be threatened by terrorism, the proliferation of arms, low intensity conflicts, and political and economic instabilities. These situations threaten us directly, and also provide opportunities for exploitation by our major antagonists. Hence, the demands upon our military capabilities are unlikely to diminish. Our national military strategy, with its proper emphasis on deterrence, will continue to be tested. That strategy will, in turn, continue America's reliance upon our maritime forces to be able to respond to a wide variety of conflicts. This is a role to which their global reach, rapid responsiveness and integrated combat power makes them particularly well-suited.



## MARITIME STRATEGY

The Soviets have not been blind to the apparent strengths and weaknesses of the free world. Far from the mere coastal defense navy of a few decades ago, the present Soviet Navy has true blue water operating capabilities. They have amassed a submarine and surface force capable of interdicting Sea Lines of Communication (SLOC) in recognition of our lack of sealift assets and our declining merchant marine.

The thrust of Soviet strategic thinking was fully considered when the maritime strategy was formulated. A basic dictum of most strategists is that a knowledge of one's potential opponent must be central to all of our own efforts. Due note has been taken of the fact that the Soviets believe that a war with NATO will be decisive and global in nature. The Soviets have focused on sea control in waters contiguous to their homeland and on sea denial in other key oceanic areas, including vital alliance SLOCs.

The strengths and weaknesses of the Soviet Navy are also factored into the strategy, to include a healthy respect for the large numbers of Soviet submarines, land-based aviation, and cruise missile capabilities. Soviet deficiencies in naval aviation and amphibious power projection have been examined closely.

The answer is clear. The Fleet must be built up to the level necessary to assure control of the seas. Maintaining our capability to reinforce our Allies, as well as our own forward deployed forces, is vital. The development of a forward pressure strategy and the naval structure to execute it, is the primary determinant for dominating the key littorals and maritime choke points.

The maritime strategy is not an independent series of tenets conceived in isolation from the goals of the nation as a whole. On the contrary, it is based on pertinent policy and strategic documents. It is essentially centered upon an aggressive forward naval presence. The general goals of this strategy can be summarized as follows:

- ° Deter war if at all possible
- ° If deterrence fails:
  - °° destroy enemy maritime forces
  - °° protect allied SLOCs
  - °° support the land campaign
  - °° secure favorable leverage for war termination

If deterrence fails, the primary national objective in the early stages of a conflict will be to limit its expansion. However, if these efforts are unsuccessful, then consideration must be given to affecting the scope and duration of the war. Maritime superiority will enable our alliances to limit Soviet advantages and allow for the attack of Soviet assets in areas where they would prefer not to fight. Translated into a specific NATO scenario, this strategy would enable NATO forces to secure the Atlantic SLOC to Europe, defeat Soviet attacks on the northern flank, and if need be, carry the fight to Soviet operating areas and seek the best possible leverage for war termination.

This strategy is not an alternative to the coalition defense of Western Europe. Nor is it an impediment to the enhancement of our other conventional forces. The maritime strategy complements these forces. The strategy prescribes a well-coordinated, sequential concept of global and theater-level operations that capitalizes on alliance strong points and exploits known Soviet weaknesses.

The maritime strategy itself is broken into three phases:

- Deterrence/Transition to War
- Seize the Initiative
- Carry the Fight to the Enemy

The ideal solution to any crisis is to control the confrontation and keep a small war from intensifying and spreading into a major conflict. In a crisis with the potential for escalating to global hostilities, one would expect the Soviets to disperse their military assets in order to limit their initial vulnerability and to seize key pieces of terrain or vital littorals. Obviously, surface and submarine forces would deploy to their assigned wartime operating areas.

On a parallel track, U.S. naval forces would begin a forward movement as well. Our own submarine and surface action groups would move from their homeports towards operating areas. Marine Air-Ground Task Forces (MAGTFs) would either put to sea on amphibious task force shipping and/or be airlifted to fall in on prepositioned equipment stocks. The overriding purpose of the transition phase is to increase readiness; avoid maldeployment of forces; maximize available warning time; and to cede no vital area such as the Norwegian Sea, the Straits of Hormuz, or the Mediterranean Sea by default.

Should actual hostilities commence between NATO and the Warsaw Pact, then the strategy would be to counter the attack, attrite enemy forces, and seize the initiative. Protection of the Atlantic SLOC would be undertaken as far forward as



possible so as to ensure the security of the reinforcement of Central Europe. Taking full advantage of the U.S. edge in anti-submarine warfare (ASW) technology, the destruction of the Soviet submarine fleet is one of the primary objectives of this phase. ASW operations would be conducted as far forward as possible.

Although this second phase does not envision using the massed combat power of Carrier Battle Groups (CVBG) or amphibious task forces to strike the Soviets far forward, operations in support of the main battle are not discounted. The opportunity for amphibious end runs with a MAGTF to strike behind Soviet lines at points of opportunity would be carefully considered and exploited.

The last phase of the maritime strategy seeks to build on the successes of preceding phases, so that war termination can be achieved on terms favorable to the alliance. Attacks of massed naval forces on the flanks could now be undertaken in the face of a much attrited and distracted Soviet force. Our amphibious forces would press home the initiative and carry the fight to the enemy, destroying his forces, regaining territory and supporting the main theater land campaign.

## AMPHIBIOUS CONTRIBUTIONS TO THE MARITIME STRATEGY

Any maritime strategy must serve in consonance with the overall military strategy of the nation. The global maritime strategy is not solely the product or vehicle of the Navy. The maritime strategy complements the national strategy and includes due consideration of the extant political, economic and moral factors, as well as our military posture. It is a contemporary strategy and realizes the balanced structure and employment of all of our forces, in the air, on land and at sea.

It also realizes that the most technologically advanced weapons systems in the world, manned by the most professional and well-led personnel, will not produce victory unless they are employed within a strategic and tactical framework that maximizes their potential. This concept is the essence of strategy. To anticipate when, and in what situation, the nation's armed forces may be employed next is fundamental. In addition, we must develop force structures, and fit weapons and tactics to the task.

In concert with strategists and planners in the Navy, the Marine Corps has recently completed refining and evaluating its employment and the uses of amphibious forces across the spectrum of conflict from peacetime presence, through crisis response, and ultimately, to strategic nuclear confrontation. This has led to the development of an Amphibious Warfare Strategy that is a component of, and completely complementary to, the Maritime Strategy. Not only will this strategy provide the basis for future program development and budgetary defense, it will engender increased understanding and provide a baseline reference for ongoing cooperative planning efforts.



It is interesting to note that naval forces have been involved in an overwhelming majority of those occasions in which U.S. military forces were employed as instruments of policy in the last 25 years. This high incidence of involvement results directly from their ready, flexible and mobile character. Our economy and international political position today are increasingly dependent on the existence of these naval forces.

The Navy/Marine Corps team demonstrates its flexibility in support of national objectives in many ways. Examples of this flexibility include:

- Assist U.S. diplomatic efforts through peaceful projection of influence and, during periods of crisis, provide a selective show of force and interest.
- Assist early commitment of U.S. forces to combat when required by controlling airfield and port facilities.
- Preserve options limiting the degree, direction, and character of U.S. involvement.
- Assist allies through provision of flexible and selective levels of military assistance.
- Provide humanitarian assistance/disaster relief.
- Protect/evacuate non-combatants and installations.
- Project military power ashore through amphibious assaults against defended objectives.
- Occupy and defend geographically strategic choke points.

The noted strategist and historian, Captain Liddell Hart, once flatly stated that "Amphibious flexibility is the greatest strategic asset that a sea-based power possesses." When he made the statement over 25 years ago, it was accepted as readily obvious. Today, some myopic critics have overlooked the advantages offered by naval forces and oriented entirely on conventional land-based forces.

This country derives significant benefits from its employment of maritime-based forces. Principal among these is the contribution of naval forces towards regional stability throughout the world. The fleets with their Fleet Marine Forces (FMFs) constitute this nation's primary military forces for response to distant crises. The Navy/Marine Corps team is a mobile force with the means to exercise sea control, to provide off-shore presence, and to execute power projection and influence. Ready amphibious forces equipped with helicopters, air-cushion landing craft, and amphibian vehicles are not dependent on air facilities, ports and land bases (and their attendant logistical and political complications). Flexible amphibious forces are capable of landing anywhere with



e isely the right size and mix of forces to avoid concentrations of hostile forces. FMFs embarked in amphibious shipping represent the ultimate in mobility, flexibility and readiness.

The history of the past 38 years supports this assertion. In the approximately 250 crises to which the United States responded by deploying forces, naval forces have been used in over 200 of these events - and amphibious forces in 80% of those instances. It is fair to assume that the nation will continue to look to the U.S. Marine Corps as its tested expeditionary force in readiness. It is the traditional role and the charter of the Corps.

The key factors that accrue to our benefit are derived from the flexible nature of maritime forces. They can vary in size and intent. They may remain muted or unobtrusive, or stand defiantly as a clear manifestation of national will. Naval forces provide staying power and credibility. They provide a signal and display our interests and a willingness to defend them if warranted. Unlike garrison forces, maritime elements can express U.S. resolve without impinging upon the sovereignty or political sensitivities of a region. In addition, these forces can operate without basing or airspace overflight rights, while remaining under discreet but direct political control. Unlike air-transported or pre-positioned elements, Marines embarked aboard amphibious shipping provide this Nation's sole forcible entry capability against defended beachheads.

Succinctly stated, Liddell Hart was on the mark. Perhaps even more evident today, the development and forward deployment of superior naval forces, employed within the framework of a global maritime strategy, is the single most critical requirement for the attainment of our national objectives. Balanced naval forces of air, surface, subsurface and amphibious elements provide all the basic tools necessary to assert and defend our interests. Maritime forces not only protect our sea lines, but can project sizable forces ashore in local or global scenarios. This formidable capability is unique to the Navy/Marine Corps team in our national arsenal. These forces remain vigilantly prepared to signal our resolve and provide a credible deterrent that is well understood by our antagonists.

## MISSIONS, FUNCTIONS AND ORGANIZATION OF THE CORPS

The Marine Corps is unique among the four services because the National Security Act of 1947, as amended, provides that the Marine Corps will consist of and shall provide:

- Three combat divisions, air wings and such other land combat, aviation, and other services... organized, trained and equipped to provide Fleet Marine Forces of combined arm ... for service with the fleet.

- Detachments and organizations for service on armed vessels of the Navy.

- Security detachments for the protection of naval property at naval stations and bases.

- Guards for U.S. embassies.

- Marines to perform such other duties as the President may elect.

The National Security Act of 1947 also requires that the Marine Corps provide rapidly deployable forces for contingency missions in support of the national strategy. The requirement to deploy forces rapidly has resulted in an FMF that provides a balance between strategic mobility and tactical capability.

FMFs are comprised of ground, air, combat support, and combat service support units that are routinely task organized into MAGTFs for training and deployments. Marine policy is that MAGTFs will be employed as integrated air-ground task forces tailored to accomplish specific missions. Regardless of the size of the MAGTF, it will include four major components:

- Command Element (CE)
- Ground Combat Element (GCE)
- Aviation Combat Element (ACE)
- Combat Service Support Element (CSSE)

Within this general structure, there are three basic types of MAGTFs that may be formed in response to operational requirements:

- ° Marine Amphibious Unit (MAU). The MAU is the smallest air-ground task force (1,800-4,000 Marines and sailors) and is normally built around a reinforced infantry battalion and a composite aircraft squadron. It is commanded by a colonel and employed to fulfill routine forward afloat deployment requirements. The MAU provides an immediate reaction capability of relatively limited combat operations. Because of its limited sea-based sustainability, the MAU will not routinely conduct amphibious assaults and may be considered the forward element of a larger MAGTF. MAUs are now continuously deployed in the Mediterranean, Western Pacific and periodically in the Atlantic and Indian oceans and the Caribbean Sea.



° Marine Amphibious Brigade (MAB). A MAB is the second type of MAGTF with 8,000-18,000 Marines and sailors and is a task organization normally built around a reinforced infantry regiment and a composite Marine aircraft group. It is commanded by a brigadier general and capable of amphibious assaults and subsequent operations ashore. During potential crisis situations, a MAB may be forward deployed afloat for an extended period to provide rapid response. With 30 days of sustainability, the MAB may be supported from its sea base, facilities ashore or a combination of both.

° Marine Amphibious Force. A MAF is the largest (50,000 plus Marines and sailors) and most powerful of the MAGTFs and normally is built around a division/wing team. However, it may range in size from less than one to several divisions and aircraft wings, together with an appropriate combat service support organization. The MAF is commanded by either a major general, or lieutenant general depending on its size and mission. It is capable of conducting a wide range of amphibious assault operations and, with its 60 days of support, sustained operations ashore. The MAF can be tailored for a wide variety of combat missions in any geographic environment.

The Marine Corps' ability to organize for combat rests on the unique structure of our operating forces, the foundation of which is the FMF. The FMF is organized geographically as Fleet Marine Force, Atlantic (FMFLANT) and Fleet Marine Force, Pacific (FMFPAC). These are "type" commands under the operational command of either CINCLANTFLT or CINCPACFLT. FMFLANT and FMFPAC are comprised of the Divisions, Aircraft Wings and Force Service Support Groups which make up the Corps' legislated structure. The FMFs provide their respective CINC with a tailored, or task organized, MAGTF to accomplish assigned missions.

The MAGTFs, the cutting edge of our operating forces, represent potent, combined-arms teams. They are sized and organized to be totally mission capable while adhering to the recognized principles of warfare. In keeping with the Marine Corps' fundamental mission of amphibious operations, MAGTFs provide the landing forces for the fleets. More detailed information on Marine tactical organization is presented in Appendix A.

The Marine Corps, with the doctrinal and structural flexibility to task organize its forces to the mission at hand, combined with its unique forcible entry capability, provides this nation with a deterrent capability that will increase in value in the future.

## MARITIME AND LAND PREPOSITIONING

The requirement for the rapid movement of credible forces to distant locations had been a limiting factor in crisis response for many years. A new dimension to the Marine Corps response posture has been developed. This contingency response program is one of the most significant developments in contemporary Marine Corps history. It substantially increases mobility, sustainability and flexibility in the projection of naval power.

The Maritime Prepositioning Ship (MPS) program is one of the most innovative strategic initiatives of this era. This concept provides for the rapid commitment of highly capable and sizeable Marine forces to crisis areas, and combines the best features of our total force airlift and sealift capabilities.

In essence, MPS calls for a squadron of four or five ships loaded with combat equipment, vehicles and supplies to be located in designated ports and/or deployed at sea. When ordered, the Marines comprising an MPS Brigade are airlifted to the vicinity of the objective area for linkup with the squadron and their equipment. Simultaneously, the brigade tactical aircraft are flight ferried to a nearby airfield. This brigade made up of 16,500 Marines and sailors, can be combat capable and ready to move to designated objectives within five days of arrival in the expeditionary area. The preemptive deployment of MPS forces provides both responsiveness and flexibility for contingency response.





As a result of the establishment of the MPS program, the Marine Corps' capabilities have been significantly enhanced. MPS has added a truly global reach to our projection of force. The MPS squadrons can steam to many of the most critical contingency areas within seven days. Once ashore, an MPS brigade packs the punch and tactical mobility to quickly strike against assigned objectives. This integrated combined-arms team is already trained and organized as a ready "force package." The brigade arrives with 30 days of sustainability so that little strategic lift is required to provide sustainability during the first 30 days ashore.

As previously discussed, our nation is dependent upon the seas to provide us with both the natural resources vital to our economy and lines of communication with our allies. The national leadership has endorsed and strenuously supported programs calling for maritime strength which will ensure a decisive degree of superiority at strategic choke points throughout the world. Maritime prepositioning operations are a new element in the maritime strategy. MPS is now a reality that provides a new weapon in the arsenal of options available to the NCA.

The MPS brigade can be called upon on a moment's notice, to provide a credible, sustained, flexible force in support of our country's military strategy. This capability can be employed to provide presence; a demonstration of national resolve; as a preemptive deployment of force to contain a conflict; or in a reinforcing role for committed or forward deployed amphibious forces. The MPS brigade is not restricted to employment in the immediate vicinity of the port/airfield facilities used for the marrying up of the personnel, equipment and 30 days of supplies. With over 100 assault amphibian vehicles, 53 tanks and 32 heavy and medium lift helicopters, it can move rapidly to close with and secure its assigned objective. The brigade arrives quickly and with sufficient punch and staying power to win.

Another strategic mobility enhancement is our prepositioning of selected equipment and supplies on land in Norway. This DOD directed program is the Marine Corps' only land prepositioning project and is based upon a bilateral agreement, the Memorandum of Understanding, signed by the U.S. and Norway in January of 1981.

The program involves the prepositioning of selected, additive equipment and 30 days of supply in Norway. Specifically identified for Marine Corps prepositioning are low maintenance, high consumption ground munitions, subsistence items, selected principal end items (PEI), construction and barrier materiel, selected medical supplies, and repair parts. Associated transportation and storage costs are also included.

A bilateral storage agreement was signed in October, 1982, and initial deliveries of equipment and supplies commenced in November, 1982. Additional deliveries were made in calendar years 1983 and 1984, and included: aviation ground support equipment, M923

5-ton trucks, M198 howitzers and heavy engineer equipment. Delivery plans for 1985 have been coordinated with the Norwegians. The program stand-up of 1989 is based upon NATO-funded construction of storage facilities and reception airfield enhancements. Until those facilities are available, equipment and supplies will be placed in temporary storage provided by Norway.

This program will reduce our response time to the critical northern flank of NATO from weeks to days. The Norway force, a Marine Amphibious Brigade sized unit, is a totally integrated, air-ground team under a single commander specifically tailored for this contingency in a cold weather environment. It is a versatile, formidable force of approximately 13,000 Marines and sailors and over 150 aircraft. Since each MAB is task organized to accomplish the mission assigned, the Norway MAB meets the unique requirements of the Norway mission, and, consequently, is different from the previously mentioned MPS brigades. This Norway prepositioning program has been designed to provide rapid deployment to an area vital to America and her allies. The program itself sends a clear signal of U.S. commitment and resolve without any requirement to post a single Marine on Norwegian soil.

In short, prepositioning provides the following:

- Superior combat power
- Rapid global response
- Superior tactical mobility
- Sustainability

The ability to combine forward deployed forces, prepositioned supplies and equipment, rapidly-deployed airlift-configured forces, and MAGTFs in amphibious shipping is a crisis response capability that is uniquely Marine in the U.S. defense establishment.



## DEPLOYMENT ISSUES

In recognition of the demand for quick response in future crises, we are preparing to fight MAGTFs that are rapidly formed around forward deployed forces. This challenge requires both the traditional readiness of our ground combat, aviation combat and combat service support forces and a new level of command element responsiveness. It also requires that we develop a framework for forming and employing larger MAGTFs from smaller MAGTFs that may be deployed for contingency response. It should be emphasized that requirements for amphibious lift and responsiveness may dictate that we deploy Marine forces as MABs. However, we plan to employ as MAFs for sustained operations.

### Permanent MAGTF Headquarters

Until recently MAGTF headquarters were formed in ad hoc fashion, usually at the same time as the MAGTF itself. Naturally, the temporary transfer of personnel and equipment required did not always provide for optimal command and control. As a consequence, the Marine Corps has established permanent, standardized headquarters for its MAGTFs. Included in this program are thirteen headquarters; four MAU, six MAB and three MAF (nucleus). Implementation of this plan, which began in July 1983, is occurring on a phased basis, with completion projected for 1990.

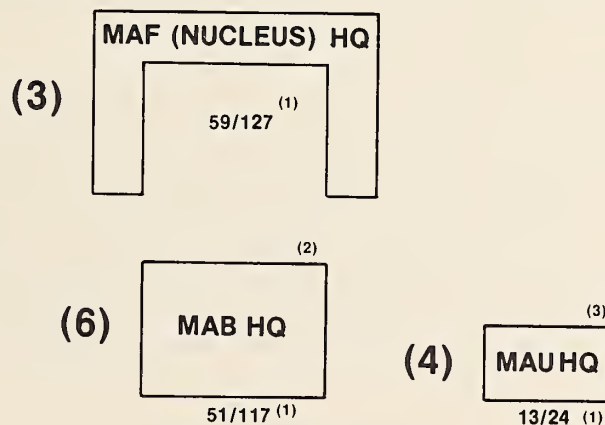


Figure 1. PERMANENT MAGTF HEADQUARTERS CONCEPT

While MAB and MAU headquarters will be established and manned as fully operational MAGTF headquarters, MAF headquarters are to be established only as nucleus organizations in peacetime. The concept (as portrayed in Figure 1) also calls for a "building block" relationship between a MAF (nucleus) and a MAB headquarters, meaning that there will be a marriage of the two whenever a fully operational MAF headquarters is to be established. Each MAF (nucleus) headquarters will provide the expertise for planning MAF-size operations and will also train to be the core of a fully operational MAF headquarters. Meanwhile, each MAB headquarters

will provide exercise forces and otherwise prepare for rapid deployments, either independently or as part of a MAF. MAU headquarters, which will not have a building block relationship with other MAGTF headquarters, will devote their time to preparing for and conducting MAU forward deployments.

The building block design of the permanent MAB and MAF headquarters saves personnel and helps to avoid having an unnecessary number of full headquarters in being at any one time. It also reflects our limited ability to provide necessary communications support. In addition, the building block approach economizes on personnel who are normally attached to a MAGTF headquarters during operations, such as Radio Battalion detachments, interrogator-translator teams, counterintelligence teams, and force reconnaissance detachments.

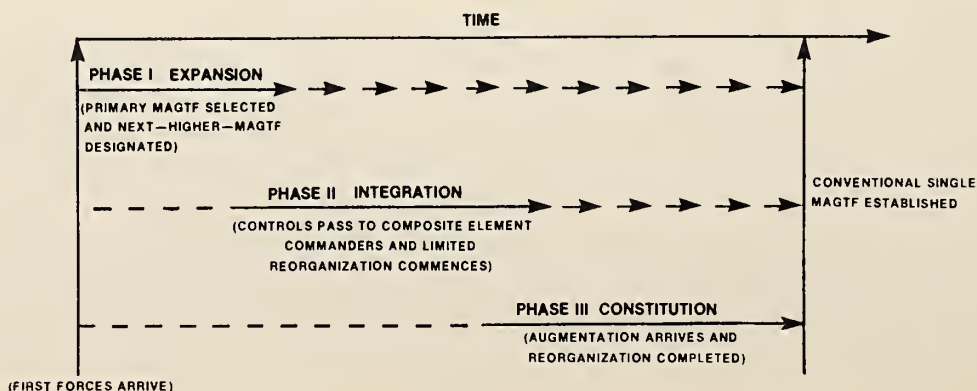
### Composite MAGTFs

A "composite MAGTF" is a MAGTF formed from the forces of two or more other MAGTFs. The term recognizes that in an expeditionary situation we must be prepared to transition separately deploying smaller MAGTFs into a larger, composite MAGTF.

Composite MAGTFs may be composed of some combination of forward deployed or mission deployed amphibious forces as well as land and maritime prepositioning forces. The specific combination used will depend upon, among other things, time, distance, and strategic mobility resources.

Our emerging framework for forming composite MAGTFs does not prescribe textbook solutions, but rather places a premium on the flexibility of the MAGTF structure and the availability of the readily deployable headquarters structure offered by the permanent MAGTF headquarters described above. Utilizing all forces available (to include forward deployed MAUs, MPS forces, augmentation forces and headquarters "building blocks"), the MAGTF commander will tailor the deployment and employment of his force to efficiently and effectively complete his assigned mission.

### THE TRANSITION PHASES



"Compositing", as required, will provide for the rapid, smooth integration of assigned forces. It will commence with initial force deployment and be completed when the MAGTF realizes its full warfighting potential.

#### Summary

The permanent MAGTF headquarters concept and the composite MAGTF concept are compatible innovations designed to increase our operational capability to rapidly deploy and employ forces. Together, they reduce our reliance on ad hoc solutions and provide a capable and responsive means for maintaining effective command and control as we employ our most effective warfighting organizations to the crisis at hand.



## THE MARINE CORPS TODAY

Our combat readiness has never been better. The Corps is well trained, equipped, and supplied for the most demanding of assignments--from low intensity conflict (including countering state-sponsored terrorism) to high intensity, large scale, global commitments. With the continued support of the national leadership, the Marine Corps will maintain and hone this readiness and our unique capability to respond to national security needs across the entire spectrum of conflict. The presence of amphibious forces, either routinely deployed or in response to a crisis, provides visible, measured support to deter or prevent escalation of a crisis. Should subsequent force be required, Marines are prepared to rapidly provide the measured response directed.

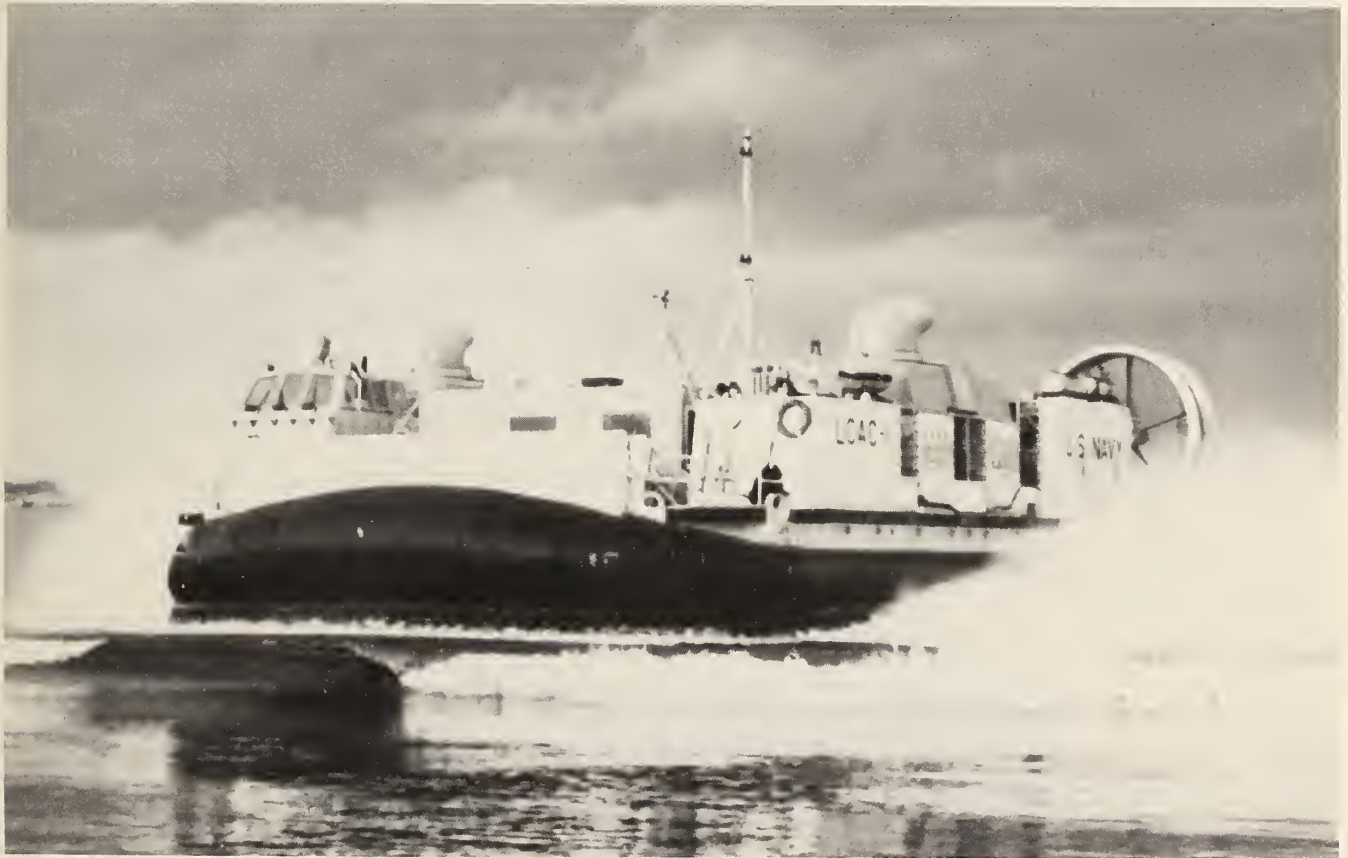
Measured in terms of structure, training, equipment, mobility, readiness, sustainability, and the indefatigable attitude of the individual Marine, the Corps provides the national defense with the most capable and flexible resource.



Prepositioning programs have raised the utility of the Corps in our national military posture. The loadout of the first MPS Brigade was completed in August 1985. The second MPS Brigade will become operational later this year and the third brigade by the end of 1986. Construction has begun on all of the cargo ships to support the MPS program. Beginning this calendar year, we will start exercising MPS forces. Selected elements of MPS 1 and 6th MAB intend to participate in conjunction with various fleet, allied, and Joint Chief of Staff (JCS) exercises. As our additional MPS sets become operational, the goal will be one JCS-directed exercise per MPS set each year involving in-stream and pier off-load, marshalling, recall, air movement, and depreservation/ represervation techniques.



In addition to our strategic mobility improvements, we have made significant strides with our tactical mobility programs. The first one is the Landing Craft Air Cushion (LCAC). Loaded on the LSD-41 and other well-deck ships, and launched from over the horizon (OTH), the 40-knot-capable LCAC, in conjunction with the helicopter, will reduce the risk to ships of the amphibious force while enhancing the surprise, mass, and maneuver of the assault force. The first LCAC has been delivered to the Navy.



The Initial Operating Capability (IOC) for the first six-craft unit to be homeported at Camp Pendleton, California, is 1986. Complementing the improvements in surface lift capability, we have supported the development of the MV-22A "Osprey." This tilt-rotor aircraft, known earlier as the JVX, will provide speed and efficiency to the assault and will be capable of lifting ground combat troops, small tactical vehicles, and anti-tank units. Replacing our aging fleet of assault transport helicopters in the 1990's, the Osprey can operate at speeds of 250 knots at vastly improved ranges. The CH-53E, the most powerful helicopter in the free world, will complement the Osprey by providing the required heavy-lift capability into the 21st century. Its 16-ton lift capacity is necessary to enhance the operational mobility of the M198 155mm howitzer, the Light Armored Vehicle (LAV), as well as other MAGTF heavy equipment.

The 5/4-ton High Mobility Multipurpose Wheeled Vehicle (HMMWV) will be the primary tactical vehicle for combat and combat support units. Its functions will include troop and weapons transport; weapons platform; reconnaissance; fire support; medical evacuation; and command, control, and communications applications. Fielding will commence this year and continue through FY88.

Our infantry battalions have been appreciably enhanced through a marked increase in their organic firepower. This increase is the result of the acquisition of the improved M16A2 rifle, a new squad automatic weapon (SAW), an improved M60 machine gun, the MK19 40mm machine gun, the M2 .50 caliber machine gun, the Shoulder-Launched Multipurpose Assault Weapon (SMAW), and a new 60mm company mortar.

The Marine Corps' armor defeating capability is also being improved. Each Marine division now has the TOW-2, which is capable of defeating any known threat armor. The TOW-2 is equipped with a thermal night sight. The Dragon, Medium Anti-Armor System, which will also have a thermal night sight, is undergoing a product improvement development.

The LAV was developed to fill a requirement for increased firepower and tactical mobility within the Marine Corps. The LAV battalion will eventually contain eight configurations of the LAV. Six of these configurations of the LAV; Assault, Mortar, Recovery, C<sup>2</sup>, Logistics, and Antitank are under procurement. The other two mission-role vehicles, the LAV Air Defense and the LAV Assault Gun, are still in development.



The M60A1, the Marine Corps' main battle tank, is reaching the end of its service life. The M1A1 tank, which has been approved for service use as the replacement for the M60A1, will provide the Marine Corps state-of-the-art capability. First deliveries will occur in FY89 and IOC is FY90.

The modernization of Marine Corps artillery is continuing. All towed artillery battalions in the active force will be equipped with 155mm howitzers by the end of the fiscal year. The new M198 howitzers have been included in the prepositioning programs. Additional procurement of M198's for the Reserves is planned for FY86-87. Additional self-propelled, 155mm batteries are being



activated to improve our general support artillery capability through their mobility and survivability. Our target acquisition capability will be enhanced by the fielding of the AN/TPQ-36 counterfire radar during this year. An additional enhancement is the Navy and Marine Corps joint program for a Remotely Piloted Vehicle (RPV) with a desired initial operational capability of FY88. An RPV unit will provide the MAGTF with an accurate, medium-range target acquisition capability.

Improvements in the aviation element of the Marine Corps have kept pace with the ground. With the support of Congress, the introduction of the AV-8B into the Marine Corps will continue this year. This unique aircraft is compatible with our forward basing strategies and complements the flexible capabilities of our Marine Corps. The AV-8B builds on the proven concepts of VSTOL (Vertical and Short Take-off and Landing). As our first AV-8B squadron becomes operational this year, we have confirmed a pressing need for a two-seat trainer version. The largest pilot transition requirement commences in FY87 and will continue for the next few years. The timely introduction of this trainer, the TAV-8B, is critical to the safe, efficient, and effective conversion of our remaining light attack force.



The Marine Corps continues acceptance of the reliable and effective F/A-18. Our aircrews report that the F/A-18 is both a responsive and agile fighter, and a highly accurate attack platform. As we continue our ultimate goal of 12 F/A-18 squadrons, we will convert our fourth and fifth squadrons at Marine Corps Air Station (MCAS) Beaufort, South Carolina this year. Concurrently, two Marine F/A-18 squadrons will deploy this year aboard aircraft carriers as part of the Secretary of the Navy's interoperability initiative.

During FY86, we will accept the first installment of our two-year buy of 44 AH-1T+ attack helicopters. The acquisition of the AH-1T+ enables the Marine Corps to reduce existing inventory shortfalls as well as upgrade its capability. The incorporation of the T-700 engine in the AH-1T+ provides Marine attack helicopters the ability to operate anywhere in the world. The Hellfire missile system will become operational with the introduction of the AH-1T+. Finally, a night enhancement capability will also be inherent with the AH-1T+. This effort includes night vision goggles with compatible cockpit lighting.

New systems to assist the Marine on the battlefield are in various stages of development and fielding. These systems provide FMF commanders with automated command and control support to cope with the increased tempo and complexity of the modern battlefield, while at the same time providing the commander with the critical network with which to bring together the diverse combat capabilities in the Marine Corps at the decisive time and place on the battlefield.

One of these systems is the Position Location Reporting System (PLRS). PLRS is an automated, tactical, command and control system that provides the user with accurate, real-time position location and identification information. The Marine Integrated Fire and Air Support System (MIFASS) is another tactical command and control system which provides the Marine Commander automated support for the timely and efficient integration of supporting arms.

The budget contains a proposal for a Tactical Air Operation Module, TYQ-23, an important centerpiece for our air command and control modernization program. The unique, modular construction of the TYQ-23 allows it to be tailored to the size of the ACE of the MAGTF. The TYQ-23 decreases response time and requires fewer personnel. All of the reliability initiatives demonstrated in TYQ-23 support will increase MAGTF responsiveness and mobility.

Our ability to produce and disseminate intelligence to tactical commanders is developing rapidly under the Marine Air-Ground Intelligence System (MAGIS). The Intelligence Analysis Center, the "heart" of MAGIS, became operational this year. Other items being developed include the All-Source Imagery Processor, a soft-copy imagery exploitation system which exploits electro-optical, infrared, and radar imagery in near real-time from tactical and national sources. Our signals intelligence and electronic warfare systems will be modular, transportable, and semi-automated. They will intercept, identify, locate, and jam threat signals from both airborne and ground based platforms as well as analyze and report intelligence information from tactical and national sources.

We remain dedicated to improving the ability of tactical commanders to exploit national intelligence capabilities through the Tactical Exploitation of National Capabilities (TENCAP) program. TENCAP assists in developing the systems, procedures, and force structure required to accomplish this vital function. It also educates and exercises our operational commanders in accessing those national systems which complement tactical reconnaissance.

We are continuing to restore and enhance the ability of our Force Service Support Groups (FSSGs) to support and maintain amphibious operations at all levels of MAGTF configuration. Increasing the manning level of the FSSGs represents the culmination of our Combat Service Support restoration plan, which will have elevated the FSSG manning from a level of concern in



FY80 to a healthy level by FY88. These enhancements are being applied to our Reserve component combat service support force as well.

The Marine Corps Field Logistics System (FLS) improves our strategic mobility and sustainability by concentrating on the development of needed materiel in configurations that are compatible with the requirements of containers from merchant fleet ships. We are in the process of procuring and fielding the Lightweight Amphibious Container Handler (LACH). The LACH, which has been operational since FY84, is a towed, straddle-lift carrier designed to remove containers and tactical shelters from beached landing craft and place them on trucks for further transport to inland areas. The LACH can also be dismantled and transported inland for routine container handling.



The Logistics Vehicle System (LVS) consists of a powered front-body unit and four rear-body, trailer-type variants. This vehicle system will be capable of carrying standardized containers and heavy cargo, and will provide a necessary and significant improvement in tactical mobility while achieving a more supportable logistics vehicle fleet. The LVS became operational during FY85 with a total of 1,400 in service by the end of FY88.

As a force-in-readiness, the Marine Corps must be capable of rapidly deploying to respond to crises or contingency situations. Presently, we plan our embarkation process manually; however, we are currently developing an automated information system, called the Computer Aided Embarkation Management System (CAEMS), which will function on a microcomputer and use state-of-the-art graphics features. This system will enhance the Marine Corps' capability to combat-load ships and aircraft with each MAGTF's complement of supplies and equipment by providing automated embarkation load plans.

The Commandant has consistently stated that the Marine Corps' top operational priority is readiness. The operational readiness of our Fleet Marine Force units to respond rapidly throughout the entire spectrum of conflict continues to be the Marine Corps' top priority. Our emphasis on readiness is apparent in the array of MAGTFs which are fully combat ready and prepared for immediate contingency deployments.

The Marine Corps has recently completed an extensive review of what special operations can be conducted by MAGTF's. It was determined that MAGTF's are uniquely qualified to conduct a broad spectrum of special operations in a maritime environment -- particularly when the situation calls for the introduction of helicopterborne or surfaceborne forces from the sea.

Although a significant capability for special operations currently exists within our MAGTFs, particularly in our forward deployed MAUs, the Commandant has directed an aggressive effort to optimize this capability. FMFLant has been tasked to undertake a pilot program, focusing on enhancement of the capability of forward MAU's to conduct appropriate special operations.

It is not our intent to establish new units which would unnecessarily duplicate special purpose organizations such as Special Forces or SEALs. We recognize the unique character and importance of such special organizations, and it is our intent to work toward ensuring that Marine Corps special operations capabilities are complementary. Our initial objective is to ensure that our MAGTFs, which are routinely deployed with the Fleet, are fully capable of conducting appropriate operations, either by themselves or, when mission requirements so dictate, in conjunction with special purpose organizations.

In summary, as Marines, we have the unique capability, unmatched anywhere in the world today, to make a forcible entry from the sea with a fully integrated, mission-tailored, combined-arms, self-sustaining air-ground team. We enable our country to keep the qualitative edge needed to provide a decisive, flexible, credible response by amphibious forces in global crises.



## SECTION II

### MANPOWER AND QUALITY OF LIFE

Despite the allocation of significant resources to a long list of modernization and enhancement programs, the Marine Corps has not neglected its most important program -- Marines and their families.

The commendatory performances of this past year by Marines dedicated to their assigned mission and to their country have been made possible by the exceptional talents and courage of this nation's young men and women. Our first priority, therefore, continues to be the accession and retention of high quality individuals. Recruiting and retention statistics for FY84 and FY85 bode well for the future and should ensure that the individual, combat-trained Marine remains our most valuable asset.

End strength and quality of life are discussed in this section.



## END STRENGTH

The determination of military manpower requirements is a part of the continuous comprehensive requirements determination process which considers national strategy and defense guidance. Early in the process, the analysis is synthesized with traditional functions and missions to describe a capability requirement for the program years which represents a force structure demand for manpower designed for a minimum risk. This minimum risk force is unconstrained by fiscal and manpower limitations, and provides a point of departure from which to measure strength capabilities. Within the Joint Strategic Planning System (JSPS) process, the minimum risk force is refined to a planning force consistent with a reasonable level of risk. This planning force is judged capable of executing the Marine Corps responsibilities for the national military strategy, and represents a mid-range objective described in the current Marine Mid-Range Objectives Plan (MMROP) which presumes a peacetime draft and 180 days of mobilization.

The planning force, as a mid-range objective, is further pared down to force levels required immediately for war and against which readiness in peacetime is measured. Such force levels comprise the programmed structure and provide the specific requirements benchmark for program development, as well as for measuring immediate readiness for war. The FY86 defense authorization includes the resources for an end strength of 198,800.

The program to support new requirements attempts first to correct existing skill deficiencies, and then to achieve the new manning levels by sustaining an aggressive retention program and a relatively level non-prior service accession demand. Marine Corps resources have been judiciously applied to further the program objectives.

During the evaluation of manpower supply supportability, certain factors were examined and their impact evaluated. The assessment assumed military pay raises aimed at achieving civilian comparability in order to recruit and to retain quality individuals. Other factors, such as youth unemployment, were also considered in the analysis.

The end strength (E/S) profiles from POM-87 are reflected below (strength 000's):

	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>
Officers E/S	20.3	20.3	20.3
Enlisted E/S	178.0	178.5	180.0
Total E/S	198.3	198.8	200.3



## RECRUITING AND RETENTION

The Marine Corps is presently enjoying a period of unprecedented success in the areas of retention and recruiting. This level of success, in large measure, determines readiness of the Corps both today and for the future. The Marine Corps continues to pride itself on planning for and providing the right force, both in quality and quantity, to meet our unique missions and responsibilities. Our plans for FY86 primarily build on the success achieved last year, attempting to refine programs and procedures to maintain a high level of readiness.

Providing quality Marines to the Corps requires a balanced combination of retention and recruiting. It also requires a competent degree of management to ensure proper execution (the right Marine, at the right job, at the right place, at the right time). Failure to meet these management steps guarantees waste, turbulence, and reduced readiness.

During FY85, retention of quality officers remained high, as it is expected to do this year. Additionally, this past year we accessed 1677 lieutenants and warrant officers who, as a group, had sterling credentials, both adding to the excellence of the total officer community and providing superb future leaders. This trend in high quality accessions should continue through FY86.

FY84 was a banner year in total reenlistments for the Marine Corps. By retraining well-qualified and proven enlisted Marines, the leadership and experience levels of the force were substantially raised. This, combined with controlled use of the Selective Re-enlistment Bonus program and a vigorous lateral movement program, significantly contributed to lowering skill imbalances throughout the Corps, reducing this problem area to the lowest level attained in years. In FY85, the Marine Corps is experienced a continuation of the success realized last year as we applied these same manpower management and career planning techniques. Marine recruiters have "done themselves proud"! Fiscal year 1985 recruiting requirements were satisfied both in quantity and quality. Almost 96 percent of the regular male non-prior service recruit accessions scored in the upper three categories of the Armed Forces Qualification Test (AFQT) and over 96 percent of the accessions were high school graduates. This is almost a mirror image of FY84's record-setting recruiting effort.

In addition to general quality improvements, field commanders also benefit from a major policy change in recruit accessions to a level load program, which reduces turbulence and increases our ability to train Marines. They also benefit by the force "aging" process we are enjoying today, which builds on better retention, providing more experienced and qualified Marines at every level of responsibility. One reason for the aging is an increased emphasis on longer enlistment and reenlistment contracts. Whereas only 71 percent of our recruits in FY81 entered under four to six year contracts, 97 percent in FY85 were recruited for these longer periods. This same emphasis is being placed on reenlistments.

The Marine Corps continues on a steady and successful course of commissioning and enlisting quality young Americans. As mentioned, we enjoyed unqualified success in recruiting FY85. Additionally, in light of the high level of retention providing both stability and improved readiness, fewer new Marines will need to be enlisted or commissioned. As officer strengths remain relatively stable, less than 1,700 new officers will be required in FY86. Similarly, despite planned growth in enlisted strength in both FY85 and 86, only about 31,000 new Marines will need to be enlisted in FY86.

With respect to accessions in FY86, we entered the year well poised to maintain the momentum, starting with almost 55 percent of the total enlisted force requirements in the Delayed Entry Program (DEP) pool. Additionally, over 98 percent of those in the DEP are high school graduates and seniors, and less than 1 percent scored in AFQT category IV or below.

Three recruiting goals have been established for FY86. The first is to continue to access high quality youths to ensure high technology fields are manned with Marines capable of truly understanding the systems they operate, and to ensure we continue to expand the numbers of higher mental groups assigned to combat arms specialties. In this latter area, greater mental adaptability is needed to master complex new weapons systems and to understand today's complex tactics, fire support, and communications doctrine. We will not sacrifice our quality objectives to attain overall numbers; the long-term costs, as we have learned, are far too severe. Our second goal is to continue to strive for level input to the recruit depots, particularly during the historically lean, late winter to early spring months. The level load system is essential to personnel management and is very cost effective.

Our third goal is to continue to recruit to specific requirements of every Reserve unit in the country. In the past, we enlisted the total number of Reserves needed, but without thoroughly integrating manpower and training plans to ensure essential specialty training upon completion of boot camp.

The Marine Corps has never been more ready to fulfill its role as the nation's Force-in-Readiness. We have attained unprecedented heights of quality while surpassing every retention and accession goal. Our Corps today is not an accident, but a product of long-term planning, support, and leadership of which we can be proud.

## MILITARY CONSTRUCTION PROGRAM

In FY86, the Marine Corps Military Construction funding request was \$270.6 million. The funding reflected a balanced program with projects distributed as follows:

Operations and Training	-	19%
Maintenance	-	33%
Quality of Life (Bachelor Enlisted Quarters (BEQ) Community facilities	-	33%
Other (Supply and storage, utilities)	-	15%

Among the projects funded were 6 BEQ's providing 3892 spaces. The one at Marine Corps Air Ground Combat Center (MCAGCC), 29 Palms provides two-bedroom modules with private baths for 352 persons. It includes lounges, laundry and storage areas. Anticipated construction completion is December, 1987. Two projects, an aircraft parking apron and maintenance hangar at MCAS, Tustin provide new facilities that will support the CH53E and CH46 heavy lift helicopters with expected completion in December, 1987.

Also provided were aircraft direct fueling facilities at MCAS, El Toro for the KC 130/C141 and C54 aircraft that should become operational in September, 1987.

A number of hangar improvement projects were also funded that support the activation of the F/A-18 and AV-8B aircraft squadrons.

Several projects, one at MCB, Camp Butler and another at MCAS, Kaneohe Bay provide heavy gun shops for the M-198 with completion expected in September, 1987. LAV maintenance facilities are also being funded for MCB, Camp Pendleton and MCB, Camp Lejeune with a completion date of July, 1987.

<u>Funding</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89-91</u>
(\$ Millions)	270.6	328.5	377.0	1,269.5



## BACHELOR ENLISTED HOUSING

The Marine Corps follows the DOD policy to provide suitable accommodations for all bachelor military personnel required to reside aboard the activity for military necessity, and for those personnel who reside aboard the activity when suitable accommodations are not available in the local community. Government quarters will not be built for officers and staff noncommissioned officers who are not required to live aboard for military necessity or for whom suitable private accommodations are available.

To implement this policy, the Marine Corps has programmed approximately 35 percent of its annual Military Construction Budget for Bachelor Housing. With the completion of the FY 1985 program, the Marine Corps inventory of adequate enlisted billeting spaces will be approximately 68,848 through new construction and modernization of existing quarters.

### BACHELOR ENLISTED HOUSING PROGRAM

	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
Number of Adequate Spaces Planned to be Added During Year	3,892	5,752	3,622	2,019	2,540
Cost of New Construction/ Modernization (\$ Millions)	70.9	115.0	93.2	67.1	64.0

## FAMILY HOUSING

The Commandant of the Marine Corps has the management responsibility for 19,736 family housing units and 625 mobile home spaces throughout the United States and Japan. We are continually building new units where deficits exist, which for the Marine Corps is Southern California. During the period 1981 - 1985, 1,595 new family housing units were constructed or are currently under construction. Additionally, 632 new units will replace the aged inventory of sterling homes located near Camp Pendleton. This is a very special project in that we are building strictly for Privates through Lance Corporals. The construction program proposed for FY 87 includes building mobile home sites at four locations. Marines often buy a mobile home and are transferred to an area such as Southern California where virtually no off base sites exist. Construction of more mobile home spaces will both offer a Marine that "chance" to buy if he so wishes and also a place to move his home when transferred.

The major repair program has tremendously affected our homes by renovating our existing inventory. Whole house rehabilitation for over 8000 homes has been conducted since FY81. Plans are in the works to conduct 5000 more whole house rehabilitation in the next five years. Places such as Midway Park at Camp Lejeune, Rebuilt Village at Parris Island, Namar Housing at El Toro and housing at Cherry Point have been or are undergoing whole house repairs. These homes are exclusively used by Private through Lance Corporal.

The family housing improvement program also betters our quality of life. Through this program, patios are being added to homes, community centers are programmed and alterations to homes such as dishwashers are provided.

Based on current known deficits the Marine Corps construction program in units is identified below:

<u>Activity</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
MCAS El Toro		202	100	200	156
MCAGCC 29 Palms	392	161	100	200	100
MCB Camp Pendleton		130	289	126	376
TOTAL	<u>392</u>	<u>493</u>	<u>489</u>	<u>526</u>	<u>632</u>

The major repair program which is accomplished within the maintenance program will provide the needed renovations. Funds programmed for major repair projects are indicated below:

<u>Funding</u> (\$ Millions)	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
	30.8	36.2	37.8	39.0	41.5

Improvement programming is as follows:

<u>Funding</u> (\$ Millions)	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
	10.2	15.7	16.4	17.1	28.6





### SECTION III

#### INVESTMENTS IN A MODERNIZED MAGTF

##### PART 1

##### GROUND COMBAT ELEMENT

This section is composed of those program areas associated with the mission area of ground combat.

- Mk-19 40mm Machine Gun
- M249 5.56mm Squad Automatic Weapon
- Shoulder-Launched Multipurpose Assault Weapon
- M1A1 Main Battle Tank
- M252 Improved 81mm Mortar
- Light Armored Vehicle
- Landing Vehicle Tracked LVT7A1
- M198 155mm Howitzer
- TOW-2 Missile Program
- Modular Universal Laser Equipment (MULE)
- Remotely Piloted Vehicle (RPV)
- M9 9mm Beretta Pistol
- M60E3 Lightweight 7.62mm Machine Gun
- M16A2 Rifle
- General Support Rocket System (GSRS)
- Dragon PIP
- Battery Computer System (BCS)
- Armored Vehicle Launched Bridge

## Mk-19 MOD 3 40MM MACHINE GUN

DESCRIPTION: Crew-served, automatic grenade launcher capable of engaging light armored vehicles and infantry from 65 meters to 1600 meters. Weapon weighs 75.6 pounds, will be mounted on the M151 1/4 ton truck as an interim measure until the HMMWV is fielded. It may be used on the LVTP-7A1. Weapon fires a high-explosive, dual purpose (HEDP) round - the M430 - which can penetrate 2 1/2 inches of Rolled Homogeneous Armor (RHA). It can also be mounted and fired from the M3 (.50 cal) tripod as pictured above.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY	1687	103	189	189	189

WHY IS IT IMPORTANT? The Mk-19 is being introduced to counter the growing numbers of infantry fighting vehicles with which potential enemies are equipping their forces. The addition of twelve Mk-19s in each infantry battalion will increase its organic firepower by 15 percent, and will allow the anti-tank weapons to concentrate their fires on tanks. Maximum effective range of the Mk-19 against point targets is approximately 1600 meters.

WHAT IS THE MARINE CORPS POSITION? Field the weapon as rapidly as possible.

DEVELOPER/MANUFACTURER: First competitive contract was awarded to Maremont Corporation, Saco, Maine. First civilian produced model was delivered in September 1985.

M249 5.56mm SQUAD AUTOMATIC WEAPON (SAW)



DESCRIPTION: Individually portable, gas operated, magazine or belt fed, light machine gun that will replace the M16 as the automatic rifle in the fire team. It will increase the firepower of Marine infantry units, with a capability of engaging point targets out to 800 meters, firing the improved, NATO standard 5.56mm cartridge (M855). The SAW will also be fielded throughout all combat, combat support and combat service support units, as well as Marine Barracks.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY	7,024	1,000	1,000	533	-

WHY IS IT IMPORTANT? A weapon which provides aimed and suppressive fire at extended ranges is needed in the fire team. The current automatic rifle does not have the sustained fire and extended range capabilities to provide Marine infantry firepower to equal that of anticipated threat forces. The M249 provides the required improvement in sustained rate of fire (100 rds/minute) and has a maximum effective range of 1000 meters against area targets. The procurement of this weapon will put the Marine Corps on an equal footing with threat forces equipped with RPK and PK machine guns.

WHAT IS THE MARINE CORPS POSITION? Procurement of the weapon began in FY-82. Continue procurement to acquisition objective.

DEVELOPER/MANUFACTURER: Fabrique Nationale of Belgium.



SHOULDER-LAUNCHED MULTIPURPOSE ASSAULT WEAPON  
(SMAW)



DESCRIPTION: The SMAW is a man-portable assault weapon to be employed at the rifle company level. It is capable of defeating field fortifications (bunkers), urban structures (concrete/masonry) and has a secondary capability of destroying light armor. It employs a dual-mode warhead which automatically discriminates between relatively soft targets (earth/logs/sandbags) and hard targets (concrete/masonry/light armor), functioning in the delay mode against the soft targets and in the immediate detonation mode against the hard targets. The antiarmor round will be fielded in FY89.

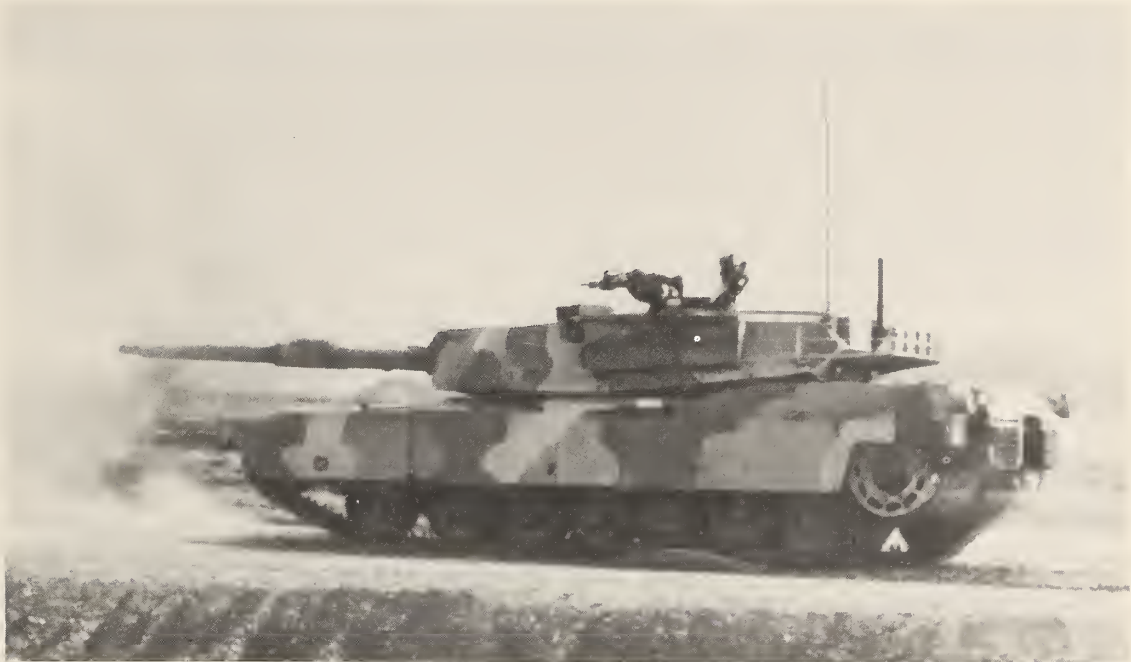
<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY	1445	535	-	-	-

WHY IS IT IMPORTANT? The Marine Corps currently does not possess a man-portable assault weapon capable of defeating field fortifications and urban targets. This weapon's secondary capability to defeat light armor allows units to employ their anti-tank weapons against tanks and heavier armor.

WHAT IS THE MARINE CORPS POSITION? Field the SMAW beginning in FY85. (November 1984-IOC)

DEVELOPER/MANUFACTURER: Warhead - NSWC Dahlgren.  
Launcher - McDonnell Douglas Astronautic Co., Titusville, FL.

M1A1 MAIN BATTLE TANK  
(MBT)



DESCRIPTION: The M1A1 MBT is an improved version of the Army's M1 which is currently being fielded. The M1A1 will weigh 63 tons but will exert only 13.7 pounds per square inch (PSI) in ground pressure. Like the M1 it will be powered by a 1500 horsepower (HP) air-cooled, regenerative turbine engine. The most significant improvements over the M1 will be the 120mm stabilized cannon, improved armor protection, and Nuclear Biological & Chemical (NBC) protection.

PROCUREMENT PROFILE:    FY86    FY87    FY88    FY89    FY90    FY91

QTY	-	-	LLI	73	150	163
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WHY IS IT IMPORTANT? The M60A1, our current MBT, will reach its 15th year of service in the early 1990s. Since the M60A1 embodies basically 1960s technology it is essential that consideration be given to improving our MBT capability. In the early 1990s the M1A1 will represent the most advanced/survivable MBT available. Acquisition of the M1A1 will represent a major upgrading of the armor capabilities within the Marine Corps. Increased armor protection, improved fire control, greater speed and agility, and increased firepower will enhance the combat capabilities and survivability of this MBT.

WHAT IS THE MARINE CORPS POSITION? The M1A1 was approved for service use and procurement by the USMC in Feb 1985. IOC is scheduled for FY90.

DEVELOPER/MANUFACTURER: General Dynamics Corporation

## M252 IMPROVED 81MM MORTAR



DESCRIPTION: A crew served, lightweight mortar which is highly accurate and provides for a greater range than the current 81mm mortar.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY87</u>	<u>FY88</u>
QTY	50	350	264

WHY IS IT IMPORTANT? The M29A1 81mm mortar approaching its end of service life and must be replaced. The M252 is a proven, more capable mortar that will provide increased range (4500 meters to 5650 meters) and greater lethality.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps approved the weapon for service use and procurement and will replace all M29A1 mortars on a one-for-one basis and it will be mounted in the mortar variant of the LAV.

DEVELOPER/MANUFACTURER: Royal Ordnance Factories, London, England



LIGHT ARMORED VEHICLE  
(LAV)



DESCRIPTION: The LAV family is made up of helicopter-transportable mission-role vehicles built on a common chassis. This family will provide the mobility and firepower for the LAV units to be fielded in each division. The basic LAV (shown above) will be a 14.5 ton, 8 x 8 wheeled vehicle mounting an M242 25mm automatic cannon.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>
QTY	194	292	-	-

WHY IS IT IMPORTANT? The LAV, in its MRV configurations, will provide a new dimension to the force commander's tactical employment concept. At his disposal, the commander will have a fully integrated combined arms unit possessing significant firepower and tactical mobility. Two configurations still under consideration are the Assault Gun (60mm-90mm), and the Air Defense. The Anti-Tank, Mortar, Recovery, Command and Control, and Logistics variants have been approved for service use and procurement.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps fully supports the LAV. A Marine Corps IOC was achieved in July 1984.

DEVELOPER/MANUFACTURER: General Motors of Canada

## LANDING VEHICLE TRACKED LVT7A1

DESCRIPTION: The LVT7A1 is the result of the Service Life Extension Program (SLEP) of the LVT7. There are three configurations in the LVT7A1 family (i.e., personnel carrier, recovery, repair and command and control). The LVT7A1 is a total rebuild of the LVT7, and incorporates several new improvements. These include raised headlights, raised commander's station, a new engine, night vision devices, improved suspension, a nonintegral fuel tank and an all-electric weapons station. In addition to the SLEP of the 984 LVT7s, 333 new LVT7A1s will be procured primarily for the MPS commitment. The IOC for the first LVT7A1-equipped unit was accomplished in FY84.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY84</u>	<u>FY85</u>
SLEP	481	263	240
New Buys	176	153	4

WHY IS IT IMPORTANT? The LVT7A1 will replace the LVT7 in providing the lift capability for the surface assault elements of amphibious operations, and in providing armored mobility for subsequent operations ashore. The last 240 vehicles will be equipped with an upgunned weapons station that replaces the M85 .50 cal MG with an M2 .50 cal MG and a MK19 grenade launcher. Commencing in FY87, the remaining LVT7A1's will be equipped with the new upgunned station. The LVT7A1 is essential to insure that the Marine Corps has an effective amphibious vehicle into the late 1990s, and early 2000's when the follow-on replacement vehicle is expected. To provide a follow-on vehicle for the LVT7A1, resources will be allocated commencing in Fiscal Year 1991 for an Advanced Assault Amphibian Vehicle (AAAV). The AAAV will have an eight-to-ten-year profile for fielding to coincide with the end-of-service-life of the LVT7A1. The requirement for the Navy/Marine Corps team to effect forcible entry onto a defended shore by means of amphibious assault will remain valid beyond the year 2000. The strategy for meeting this requirement should provide a full spectrum of capabilities. An assault amphibian vehicle with improved speed and survivability complements the LCAC and MV-22A and provides a variety of assault options. Moreover, a highly maneuverable AAAV is vital to the combat support and tactical mobility of the ground combat element ashore.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps fully supports this effort as mission essential. A product improvement program has been initiated. This program will include improvements such as applique armor, increased NBC protection, composite components to reduce weight, and an improved transmission.

DEVELOPER/MANUFACTURER: FMC Corporation

M-198 155MM HOWITZER



DESCRIPTION: The M198 is a towed 155mm field artillery howitzer. It is constructed of aluminum and steel, and is air transportable by CH-53E helicopter and C-130, or larger fixed wing aircraft. The M198 provides increased range, and improved reliability and maintainability over the current standard towed 155mm M114A2. The M198 will be employed as the primary direct support weapon system in all Marine divisions, active and reserve.

PROCUREMENT PROFILE:    PRIOR        FY86        FY87

<u>QTY</u>	433	35	109
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WHY IS IT IMPORTANT? The M198's maximum range of 22,400 meters with conventional ammunition and 30,000 meters using the M549 rocket assisted projectile (RAP) will significantly extend the range, lethality, and counterbattery fires of the direct support artillery battalions. The M198 will fire all current and developmental 155mm ammunition.

WHAT IS THE MARINE CORPS POSITION? Procure the M198 consistent with the current profile.

MANUFACTURER: Rock Island Arsenal, Illinois.



## TOW-2 MISSILE PROGRAM



DESCRIPTION: The TOW-2 missile program provides a modern technology assault/antitank weapon with increased lethality, improved accuracy/probability of hit, reduced-visibility capability and a significant improvement in a countermeasure environment. The TOW-2 missile contains a six-inch warhead, reloaded flight motor and a thermal beacon. The procurement profile is programmed to complete the acquisition objective which has increased due to force structure changes which doubled the number of TOW systems.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
QTY	7022	4782	3400	3400	2800	2700	2700

WHY IS IT IMPORTANT? The improved missile will permit Marine infantry units to defeat advanced Soviet armor and will enhance Marine infantry's antiarmor capability on the battlefield.

WHAT IS THE MARINE CORPS POSITION? Procure TOW-2 missiles and complete acquisition objective.

MANUFACTURER: Hughes Aircraft

## MODULAR UNIVERSAL LASER EQUIPMENT (MULE)

**DESCRIPTION:** The Modular Universal Laser Equipment (MULE) is a man-packed, battery powered, functionally modular device designed to provide forward observers the capability to accurately determine location and range to targets and to provide laser designation for all surface and air-delivered laser guided munitions. The MULE consists of three basic modules. The Laser Designator Rangefinder Module (LDRM) contains the basic laser designator and ranging equipment and is designed for hand-held employment as an independent unit. The Stabilized Tracking Tripod Module (STTM) provides the stabilization necessary for the tracking of moving targets and targets located at extended ranges. The North-Finding Module (NFM) provides a true north reference.

PROCUREMENT PROFILE: PRIOR FY85

OTY	265	115
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WHY IS IT IMPORTANT? The Marine Corps requires a precision laser designator/rangefinder to accurately locate targets, and to provide terminal guidance for laser-guided munitions. The MULE improves the effectiveness of conventional munitions delivery and provides the forward combat elements with the capability of employing air and artillery laser-guided munitions.

WHAT IS THE MARINE CORPS POSITION? Procure the item consistent with the current funding profile to enhance mission performance.

DEVELOPER/MANUFACTURER: Hughes Aircraft Company, LDRM and STTM

## GROUND LAUNCHED REMOTELY PILOTED VEHICLE (RPV)

DESCRIPTION: This program is designated to provide an RPV system to provide target acquisition, battlefield surveillance and radio relay capability in support of the MAGTF. A system is comprised of air vehicles, associated sensor packages, ground control station (GCS) and a portable control station (PCS).

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY	--	--	--	TBD

IOC for ground-launched short-range RPV is FY89. Current plans call for acquisition of 18 GCS's and 108 mini-RPV's to satisfy Marine Corps requirements.

WHY IS IT IMPORTANT? The Marine Corps interest in developing an RPV capability dates from the 1975 Marine Corps Mid-Range Plan, which identified a need for an unmanned aerial vehicle (UAV) system that could be used to accomplish target acquisition and reconnaissance. The Marine Corps is currently operating a Mastiff III mini-RPV system to develop Navy and Marine Corps Concepts of Employment (COE's).

WHAT IS THE MARINE CORPS POSITION? The Marine Corps and the Navy have formed a joint program office (JPO), with the Navy as Executive Service to manage the RPV program. The program office is staffed by both Navy and Marine Corps personnel. It is anticipated that source selections for the ground-launched short-range RPV will result from a competitive fly-off during FY86.

MANUFACTURER: TBD



M-9 9mm BERETTA PISTOL

DESCRIPTION: A 9mm, lightweight, double action, automatic pistol.

PROCUREMENT PROFILE:      FY86      FY87      FY88      FY89

QTY                              10,000    22,181    22,182    22,182

WHY IS IT IMPORTANT? The weapon will replace the current .38 and .45 caliber pistols which are at the end of their service lives and are no longer logistically supportable. The weapon will provide increased range, lethality, safety, and interoperability within NATO. The new pistol will provide improvements in readiness due to readily available parts and ammunition commonality.

WHAT IS THE MARINE CORPS POSITION? A five year multi-year contract was awarded to Beretta USA Corporation on 10 April 1985. We will commence fielding our pistols in April 1986.

## M60E3 LIGHTWEIGHT 7.62mm MACHINE GUN



DESCRIPTION: The M60E3 is a product improved M60 machine gun. The M60E3 retains all the basic performance characteristics of the standard M60 plus the following improvements: lighter weight (18 vice 23 lbs); a forward pistol grip permitting the gunner to control the gun using the assault fire technique; the bipod is attached to the forward grip assembly vice the barrel allowing a barrel change with the gun still resting on the bipod; the barrel has a quick change handle permitting barrel change without asbestos mittens.

### PROCUREMENT PROFILE: PRIOR

QTY (Upgrades)	2629
(New guns)	4630

WHY IS IT IMPORTANT? The M60E3 is superior in reliability, maintainability and accuracy, as well as being five pounds lighter than the current model. It allows us to update a twenty-year-old system at minimum cost.

WHAT IS THE MARINE CORPS POSITION? Procure the weapon as rapidly as possible as a replacement for all standard M60 machine guns. Fielding commenced with the training commands in June 1985. We will modify 100 percent all M60's to the M60E3.

DEVELOPER/MANUFACTURER: Maremont Corporation, Saco, Maine

## M16A2 RIFLE



DESCRIPTION: The M16A2 is a lightweight, air-cooled, gas-operated rifle which is fed from a 20- or 30-round detachable magazine and may be fired from the shoulder or hip, either semiautomatic or burst mode at a cyclic rate of 700 to 940 rounds per minute. The bottom of the trigger guard opens to provide access to the trigger while wearing winter mittens. The rifle will accommodate either the current M193 5.56mm ammunition or the new M855 5.56mm ammunition. The new M855 ammunition will increase both the penetration and the range of the new rifle over the old ammunition (600 meters vice 460 meters).

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
QTY	171,824	28,186	17,725	19,869	13,288

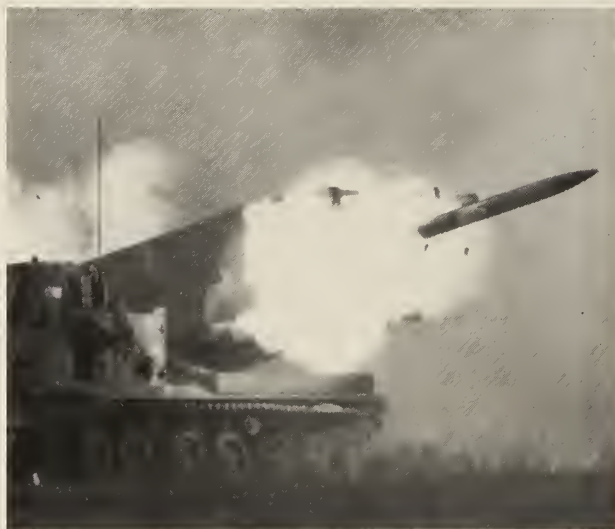
WHY IS IT IMPORTANT? The M16A2 is being procured to replace the entire inventory of the old M16A1. The following improvements were incorporated into the M16A2: (1) heavier, more rigid barrel; (2) new round, ribbed handguards made of very hard space-age polyztel; (3) new, slightly lengthened buttstock and contoured pistol grip made of polyztel; (4) a 1 in 7 twist vice 1 in 12 twist barrel to provide greater stability and range for the new ammunition; (5) redesigned rear sight which can be adjusted for windage and elevation using knobs vice detent pens (no nail required); (6) a brass deflector to preclude cartridges from hitting the face of the left-handed shooter; (7) a burst control device which limits the number of rounds fired in the automatic mode to three per trigger pull to increase accuracy while reducing ammunition expenditure; and (8) a muzzle compensator designed to improve controllability and accuracy in both burst and rapid semiautomatic fire.

WHAT IS THE MARINE CORPS POSITION? Procure the weapon as rapidly as possible to replace the M16A1 on a one-for-one basis.

DEVELOPER/MANUFACTURER: Colt Firearms, Hartford, Conn.



## GENERAL SUPPORT ROCKET SYSTEM (GSRS)



DESCRIPTION: The GSRS is a mobile rocket system that will complement cannon artillery and will be used for the attack of large area targets, counterfire and suppression of enemy air defenses and provide increased lethality over existing general support cannon systems. The GSRS lethality will be further improved when precision guided munitions are fielded in the 1990's. Replacement of some general support cannon systems with the GSRS will reduce manpower and amphibious lift requirements.

<u>PROCUREMENT PROFILE:</u>	<u>FY91</u>	<u>FY92</u>	<u>FY93</u>
QTY	30	30	55

WHY IS IT IMPORTANT? The GSRS will provide increased lethality at longer ranges. It will improve the MAGTF's ability to mass fires on critical targets to isolate the landing area and to deliver counterfire. The GSRS will allow cannon artillery to be dedicated to direct support and reinforcing missions, and will improve fire support to all combat units.

WHAT IS THE MARINE CORPS POSITION? Continue to define the Marine Corps requirement by developing a concept of employment, identifying alternative systems and alternative organizations.

MANUFACTURER: TBD

## DRAGON PIP



DESCRIPTION: The M47 DRAGON is a Medium Anti-Armor Weapon (MAAW). It is a tube-launched, optically-tracked, wire-guided system operated by one man. This system consists of a fiberglass launching tube, the missile, and the tracker. The missile is contained within the launcher and after each engagement, the reusable tracker is removed from the launcher which is discarded.

PROCUREMENT PROFILE: TBD

WHY IS THIS IMPORTANT? A Product Improvement Program (PIP) of the current M47 DRAGON system will provide a viable MAAW until the mid-1990's. Improvements to the present system will be in the following areas:

Warhead: Increased penetration by at least 80 percent and a desired 95 percent over the present warhead against RHA out to a range of 1500 meters.

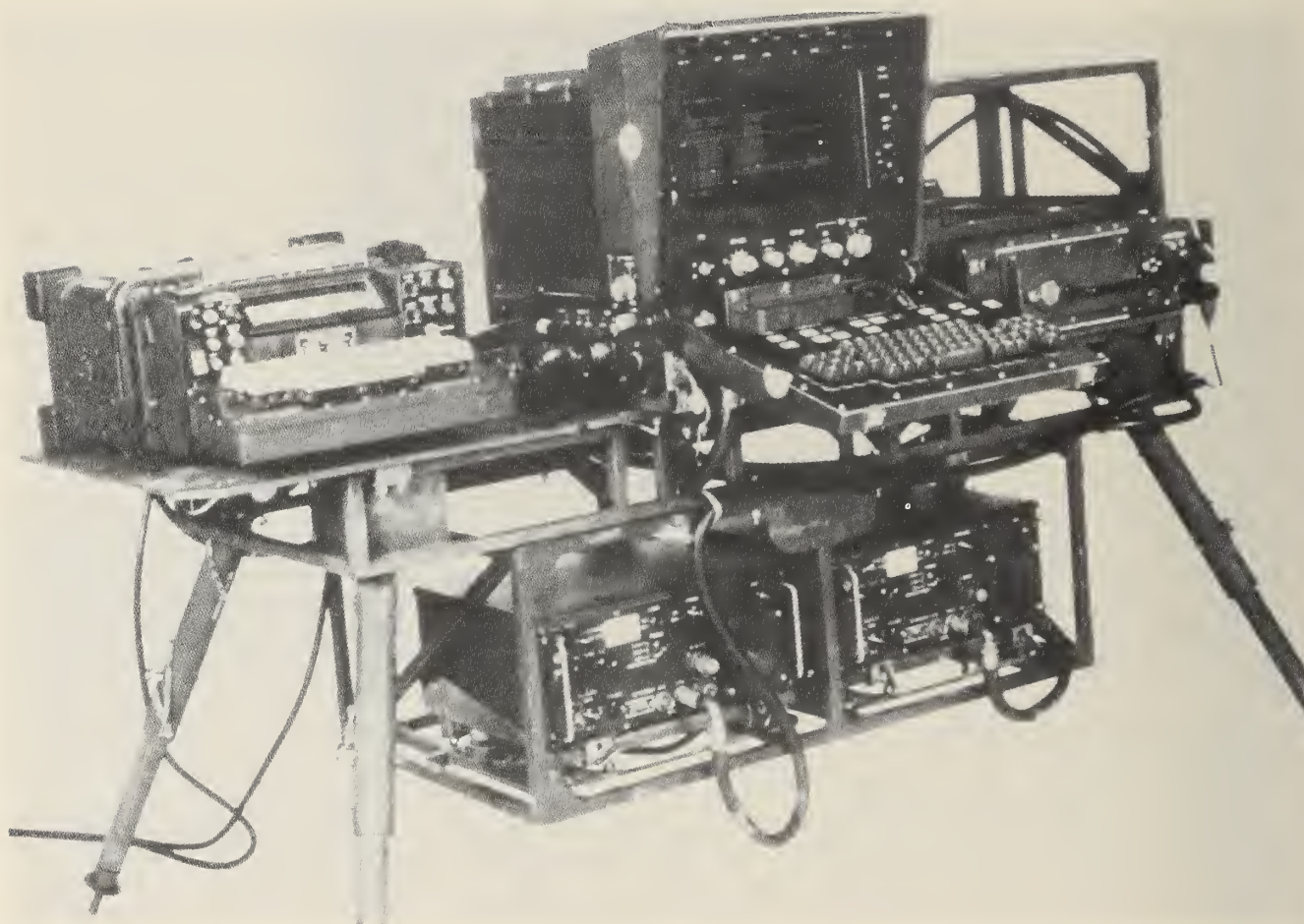
Tracker: The tracker will have a combination day/night capability and will not exceed 14 lbs in a ready-to-fire mode. The tracker will have an auto-track capability to ensure a first round hit probability of at least 85 percent at a maximum range of at least 1500 meters with the ability to acquire and lock onto a moving target at crossing speeds of 35 kph up to a range of 1500 meters.

Missile: The improved missile will be able to fly to 1000 meters five seconds faster than the current missile and will have as increased range to 1500 meters.

WHAT IS THE MARINE CORPS POSITION? Procure the DRAGON PIP as an interim replacement for the present DRAGON while continuing to support the Army's development of the Advanced Antitank Weapon System (Medium).

DEVELOPER/MANUFACTURER: TBD

## BATTERY COMPUTER SYSTEM (BCS)



DESCRIPTION: The BCS is a general purpose computer and communications processor used for technical fire direction. It computes separate firing data for each gun in a battery and includes corrections for howitzer displacement, muzzle velocity differences and meteorological conditions. Its communications capability will digitally integrate the Fire Direction Center (FDC) , forward observer, howitzer section and other artillery systems. When MIFASS is fielded, BCS will be its battery level component.

PROCUREMENT PROFILE: FY86

QTY

166

WHY IS IT IMPORTANT? The BCS will improve the artillery's technical fire direction in terms of speed, accuracy and volume of missions processed. The communications capability will increase speed and security. These capability enhancements are essential for mission performance.

WHAT IS THE MARINE CORPS POSITION? Procure the BCS consistent with the current profile.

MANUFACTURER: Norden Systems, United Technologies



## ARMORED VEHICLE LAUNCHED BRIDGE

(AVLB)



DESCRIPTION: The AVLB is an M60 tank hull used for launching and retrieving a 60-foot scissors type bridge. The AVLB consists of three major sections, the launcher, hull and bridge with the launcher mounted as an integral part of the hull. The bridge is capable of supporting tracked and wheeled vehicles with a military load of up to class 60. Bridge emplacement can be accomplished in 2 to 5 minutes with crew protection provided from small arms and overhead artillery fire. Retrieval is possible in 10 minutes. Emplacement and retrieval, which can be accomplished from both ends of the bridge, are possible without dismounting either of the two crewmen and without assistance from personnel on the ground.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
QTY	13	16	8	0

WHY IS IT IMPORTANT? Currently, tactical assault bridging with the capability of rapid erection is nonexistent in the Marine Corps inventory. For wet gap crossings, the MAGTF has to rely on hand erected, time and equipment intensive, World War II vintage M4T6 floating highway service support bridging and ferries. The Medium Girder Bridge (MGB) has replaced the M6 Fixed Highway Bridge and is currently being fielded. However, the MGB does not possess the capability to be rapidly employed in assault gap operations. The AVLB is currently fielded in use by the U.S. Army. Acquisition of this system will overcome a serious combat deficiency.

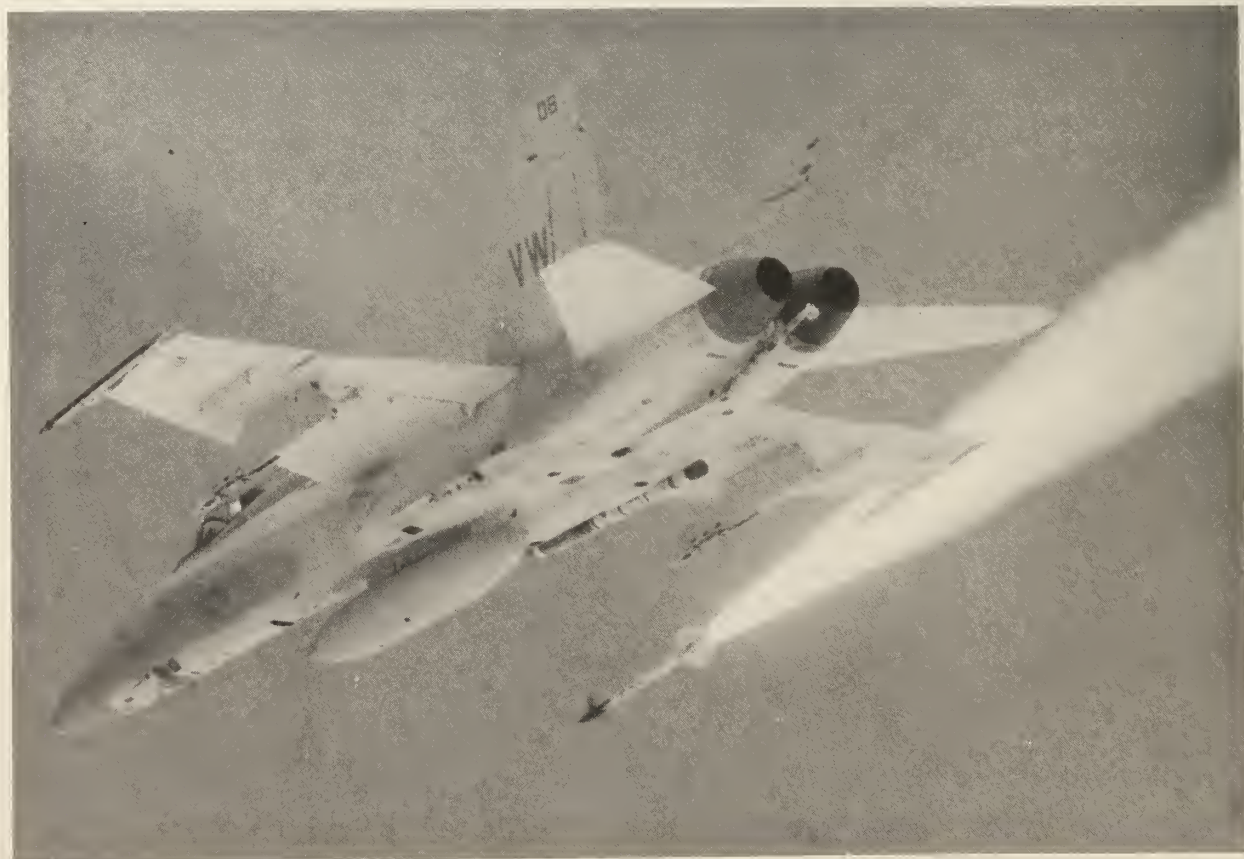
WHAT IS THE MARINE CORPS POSITION? Procure the AVLB as rapidly as possible.

DEVELOPER/MANUFACTURER: U.S. Army

## PART II

### AVIATION COMBAT ELEMENT

This section is a compilation of summary papers on the major Marine Corps aircraft and aviation weapon system programs. These papers address modernization and force level issues associated with both tactical aircraft (fixed-wing) and land force aviation (helicopters), as well as an array of anti-armor weaponry, air defense missiles, high speed RPV's and command and control systems. Profiles for the F/A-18, A-6E, EA-6B and CH-53E programs reflect total DON procurement totals for the Navy and Marine Corps based on the January 1985 FYDP.







DESCRIPTION: The AV-8B is a single seat, transonic, vectored-thrust, light-attack aircraft. The AV-8B is capable of increased payloads, extended range, and offers improved reliability and maintainability over the AV-8A. It is designed with a V/STOL capability to provide increased responsiveness to ground force close air support requirements through basing flexibility and high sortie rates. It will be configured with the Angle Rate Bombing System (ARBS) which provides an extremely accurate first pass attack capability and high kill probability through the use of passive Laser Spot or TV tracking.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
Aircraft (QTY)	59	46	32	48	32	40	40

WHY IS IT IMPORTANT? USMC tactical aviation is required to support amphibious and ground forces in a timely and effective manner. As part of tactical aviation, the missions of the light attack aircraft are close air support and interdiction. These missions are performed by the USMC either independently or as part of an expeditionary force, and require close air support aircraft with operational flexibility. The high degree of mobility inherent in ground combat operation results in rapid changes in the size and location of the battlefield. Consequently, demands for close air support operations frequently occur at considerable distances from established airfields and in terrain that is not suitable for construction of conventional support facilities. Thus, combat air support response times are greater than desirable with conventional aircraft. V/STOL attack aircraft can respond to these combat requirements more rapidly because their flexibility enables them to be based closer to the battlefield.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports a procurement profile for an all V/STOL light attack force of eight operational squadrons and one training squadron.

DEVELOPER/MANUFACTURER: McDonnell Douglas Aircraft



## F/A-18



DESCRIPTION: The F/A-18 is a twin-engine, single pilot, supersonic fighter/attack aircraft. The aircraft will fulfill both air-to-air and air-to-ground mission requirements. It has the capability to be both land and carrier based. The F/A-18 incorporates state-of-the-art technology such as digital fly-by-wire flight controls, multimode radar, and use of lightweight composites to enhance the combat capability and flexibility of the aircraft. A requirement to add increased night/all-weather capability is currently being developed.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
Aircraft (QTY)	168	84	84	120	84	88	106

WHY IS IT IMPORTANT? The Marine Corps' requirement for a fighter/attack aircraft has been filled by the F-4 Phantom. These aircraft are among the oldest in the DON. Additionally, the Phantom incorporates early 1960s technology which seriously hampers its combat effectiveness against current threat aircraft and air defense systems. The F/A-18 has the capability to accomplish the Marine Corps fighter/attack mission and the adaptability to be effective for the next 20 years. The Marine Corps currently has three operational F/A-18 squadrons, each with 12 aircraft. VMFA-314, VMFA-323, and VMFA-531 are all located at Marine Corps Air Station (MCAS), El Toro, CA. The first of six squadrons at MCAS Beaufort, SC to transition to the F/A-18 stood up in July 1985.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps fully supports the F/A-18 program.

DEVELOPER/MANUFACTURER: McDonnell Douglas Aircraft Company

## CH-53E

DESCRIPTION: The CH-53E is a 3-engine helicopter designed to lift 16 tons over a 50 nautical mile (NM) combat radius. It has a 79-foot main rotor diameter, seven titanium spar main rotorblades, a 20-foot diameter tail rotor that is canted 20 degrees, and a main gear box qualified to 13,140 shaft HP. This shipboard-compatible helicopter, is an assault support aircraft that can be employed for the internal lift and movement of cargo/troops, for the recovery of tactical aircraft and for the external lift of equipment and supplies.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
Aircraft (QTY)	21	14	14	14	14	12	24
USMC Share		8	10	6	7	7	

WHY IS IT IMPORTANT? This helicopter is the Marine Corps' heavy lift assault support helicopter and is an integral part of our present helicopter lift force. The CH-53E satisfies the requirement for the tactical movement of heavy weapons and equipment, provides lift for amphibious assault, and retrieval of downed aircraft and damaged equipment.

The Marine Corps currently has three operational squadrons, each with a 16 aircraft Program Aircraft Authorization (PAA). HMM-464 is located at MCAS(H) New River, NC, and HMM-465 and HMM-466 are located at MCAS(H) Tustin, CA. A ten aircraft training element is operational in HMT-301, MCAS Tustin, CA.

The Marine Corps has a recognized mid-term requirement for a minimum of six squadrons of CH-53E's to meet the heavy lift demands of a force which will include the M-198 howitzer and its prime mover, division heavy equipment and the Field Logistics Support System. The existing programmed procurement of CH-53E aircraft supports only four squadrons.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps plans to continue aircraft procurement throughout the FYDP, which currently reflects a 160-aircraft DON program in support of both Marine Corps heavy lift requirements and Navy mine countermeasure requirements.

DEVELOPER/MANUFACTURER: Sikorsky Aircraft

A-6E



DESCRIPTION: The A-6 is a two-seat, twin engine, medium range, versatile, carrier and land-based attack aircraft. It is capable of accurate navigation, and delivery of nuclear and conventional weapons from its five external stores stations. It has a moving target indicating system and can provide pathfinder/strike leader function for visual attack planes when required. The A-6E incorporates a new microminiaturized digital computer, a solid state weapons release system and a single integrated track and search radar.

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88    FY89    FY90

Aircraft (QTY)	12	6	11	12	8	24
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WHY IS IT IMPORTANT? At present, the A-6E is the Navy/Marine Corps only all-weather, attack aircraft. Since close air support and interdiction strikes must continue in periods of darkness and under adverse weather conditions, an all-weather attack capability is a vital requirement for Marine Aviation.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the DON procurement profile.

DEVELOPER/MANUFACTURER: Grumman Aerospace Corporation



## EA-6B



DESCRIPTION: The EA-6B is a four-place, twin turbojet aircraft with a fully integrated, computer-controlled electronic warfare system. The aircraft is deployable from austere shore bases or aircraft carriers. The EA-6B's ALQ-99 Tactical Jamming System consists of onboard receivers and up to five externally mounted ECM pods, and in combination with the Tactical Electrical Reconnaissance Processing and Evaluation System (TERPES), is capable of providing electronic countermeasures and tactical intelligence support for MAGTF operations.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
Aircraft (QTY)	16	12	12	9	9	9	9

WHY IS IT IMPORTANT? The Marine Corps requires the EA-6B Tactical Electronic Warfare (EW) aircraft to protect and screen USMC strike force and close air support aircraft. This aircraft denies the enemy effective use of early warning, ground control intercept, surveillance/acquisition, and terminal threat (guns & surface-to-air missile) radars. In addition to tactical battlefield jamming support, the EA-6B provides the Marine Corps with a capability for near real-time intelligence input via TERPES to the MAGTF Commander. The EA-6B is essential to aircraft survival on the modern electronically-dominated battlefield.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports a procurement profile which assures adequate near-term EA-6B force levels, and which builds USN and USMC EA-6B structure to the level required to combat the 1990s threat.

DEVELOPER/MANUFACTURER: Grumman Aerospace Corporation

## AH-1T+



DESCRIPTION: The AH-1T+ Sea Cobra is a two-place, tandem-seat, twin-engine attack helicopter capable of land or sea based operations. Its primary missions are armed escort for aerial or ground operations and point destruction of enemy armor. Improvements to the Sea Cobra since initial procurement in 1978 permit it to fire a variety of weapons to include TOW, Hellfire, Sidewinder and Sidearm. The 1985/1986 procurement will further incorporate the GE T-700 engine, which will result in a quantum improvement in high/hot operations and safety of flight.

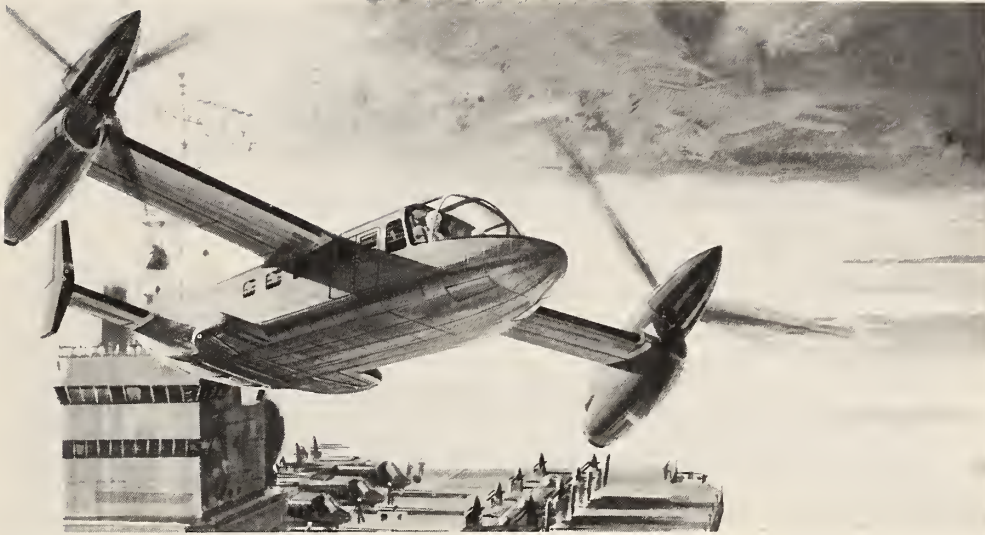
<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
	22	22	22	-

WHY IS IT IMPORTANT? The AH-1T+ is a Marine Corps attack helicopter and fulfills the requirement to provide enroute protection for our assault helicopters and their on-board troops. Further mission requirements include close-in fire support for landed troops and point destruction of enemy armor. The AH-1 community, due to the versatility of the Sea Cobra, remains heavily committed.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps procurement is vital to alleviate existing critical inventory shortfalls.

DEVELOPER/MANUFACTURER: Bell Helicopter

## MV-22A



DESCRIPTION: The MV-22A "OSPREY" is a Navy/Marine Corps program which will fill the need for common, self-deployable transports. It is designed to provide Marine Corps and Army medium lift troop and logistics support transports; Navy multi-mission aircraft for Combat Search and Rescue; Fleet Logistics and Special Warfare team support; and Air Force long range SOF transports. The OSPREY will be a 250-knot cruise tilt rotor aircraft, providing the most cost and combat-effective replacement for the fleet of aging medium lift assault helicopters.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
Aircraft (QTY)	-	-	-	Long Lead Funding	18	42	58

WHY IS IT IMPORTANT? The existing inventory of medium lift assault helicopters is declining due to normal attrition. It is not only costly to operate and maintain due to aging, but it also lacks adequate performance for self-deployability and for the execution of over-the-horizon rapid assaults. To meet mission objectives for the 1990's and beyond, replacement assault transports with significantly increased capabilities are required. Assault transports are urgently required starting in FY91 to avert a critical shortfall in assault lift capabilities.

WHAT IS THE MARINE CORPS POSITION? The OSPREY program, managed by the Navy for the joint services, has an acquisition strategy which is paced by the Marine Corps' urgent need for fleet deliveries during FY91. The Marine Corps position is that delivery in accordance with that schedule is a vital component of the modernization of Marine aviation and is required to avert unacceptable assault lift shortfalls in the early 1990s.

DEVELOPER: Bell Helicopter and Boeing Vertol



GAU 12/U 25mm Gun

DESCRIPTION: The GAU 12/U is a high rate of fire gatling gun capable of firing standard NATO/Army 25mm ammunition. It was developed by General Electric for the AV-8B.

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88    FY89

QTY 1/                            56        40        41        42        53

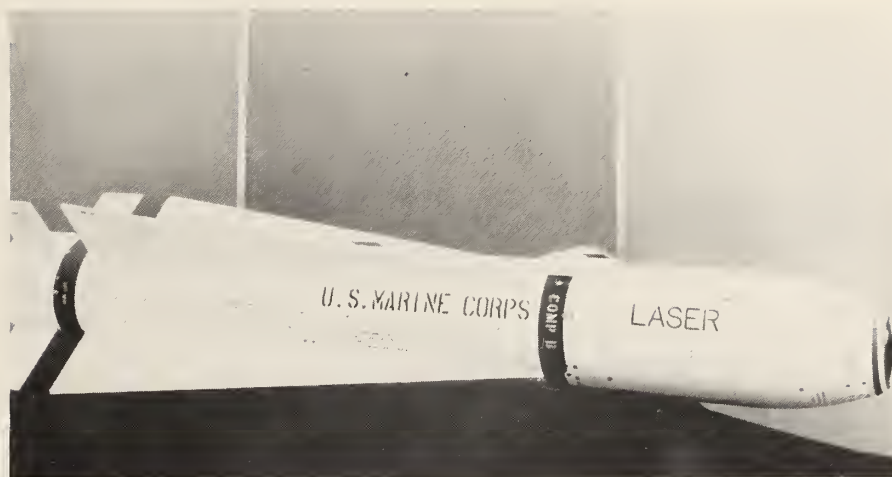
WHY IS IT IMPORTANT? Firing depleted uranium, armor-piercing and high-explosive projectiles at a high rate of fire, the GAU 12 has wide application against both air-to-ground and air-to-air targets. It will be an invaluable complement to the present and proposed array of anti-armor weapons for Marine Tactical Air (TACAIR), and has potential application on attack helicopters.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports the GAU 12 for the AV-8B as a multi-purpose gun for anti-armor and air-to-air missions.

DEVELOPER/MANUFACTURER: General Electric

1/ The number of guns purchased each year is dictated by the procurement profile for the AV-8B through the Five Year Defense Program (FYDP).

LASER MAVERICK  
AGM-65E



DESCRIPTION: Laser Maverick is a short-range, laser-guided, air-to-surface missile for close air support. Laser Maverick consists of a semi-active laser seeker, a 300-pound penetrating blast/fragmentation warhead with cockpit selectable fuze, and a rocket motor with an out-of-line ignition device to satisfy shipboard safety requirements. The warhead, fuze, rocket motor and launcher are common to the Navy's infrared (IR) attack weapon. Tests have resulted in 15 missile successes for 15 launches.

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88    FY89    FY90

Missiles (QTY)	785	1500	1800	275	-	-
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WHY IS IT IMPORTANT? Laser Maverick is the only weapon under development that satisfies the long-standing Marine requirement for a stand-off guided missile for use by TACAIR in close air support. The large (300 lb) warhead and terminal laser guidance give the ground commander the ability to positively identify and destroy a broad spectrum of targets, ranging from heavy armor to fortified bunkers. It can be loaded on the A-4M, AV-8B, F/A-18, and A-6E aircraft.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the current procurement profile which provides an IOC of FY86.

DEVELOPER/MANUFACTURER: Hughes

## GATOR

DESCRIPTION: GATOR (CBU-78) is an air-scatterable land mine weapon. It weighs 500 lbs and utilizes a modified MK 7 (ROCKEYE) container that normally will hold 45 anti-tank mines and 15 anti-personnel mines. GATOR completed technical/evaluation in May 1985.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY	1146	1380	1463	1447	1434	1422

WHY IS IT IMPORTANT? GATOR is the only near-term weapon that provides the capability to channelize or slow attacking enemy armor beyond the range of artillery. Fast minefield emplacement and adjustable self-destruct times will help the ground commander in rapidly-changing tactical situations.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports a procurement profile starting in FY84 which provides the GATOR to the FMF commencing in FY85.

DEVELOPER/MANUFACTURER: Aerojet



## HELLFIRE



DESCRIPTION: Developed by Rockwell International, Hellfire is the primary anti-tank weapon for the Army's AH-64. The 100-pound missile will have a semi-active laser terminal homing seeker. Presently entering production with the Army, the Marine Corps will adopt the missile for use on the AH-1J and AH-1T Sea Cobra attack helicopters.

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88    FY89    FY90

Missile (QTY)	657	1304	1384	2426	2376	2992
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WHY IS IT IMPORTANT? The employment of Hellfire is essential to the success of the Marine Corps' AH-1 helicopter on the high threat battlefield. Hellfire provides an increased standoff capability combined with a considerably improved kill potential over present anti-tank guided missiles. Hellfire's range of 5000 meters compares favorably with TOW's maximum range of 3750 meters. With the indirect fire and lock-on after launch firing modes, Hellfire does not expose the launch aircraft to the enemy during the missile launch and guidance sequence as TOW presently does. Finally, Hellfire's armor penetration/kill potential is greater than that of TOW.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the procurement profile for Hellfire through the FYDP to insure an anti-armor stand-off capability for Marine attack helicopters.

DEVELOPER/MANUFACTURER: Rockwell International

## SIDEARM

DESCRIPTION: SIDEARM is a short-range, self-protection, anti-radiation weapon designed for use by TACAIR and armed helicopters to counter short range air defense systems. The weapon is designed to acquire and track mobile battlefield type threat systems. The SIDEARM program is a joint Navy/Air Force development to modify AIM-9C semi-active radar Sidewinder seekers to detect and home on radar emitters. The concept involves using on-board aircraft Defensive Electronic Counter Measures (DECM) equipment to provide threat detection and existing Sidewinder circuitry to provide missile lock-on/launch signals for the pilot. The missile hardware includes the modified seekers plus new AIM-9 missile components.

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88

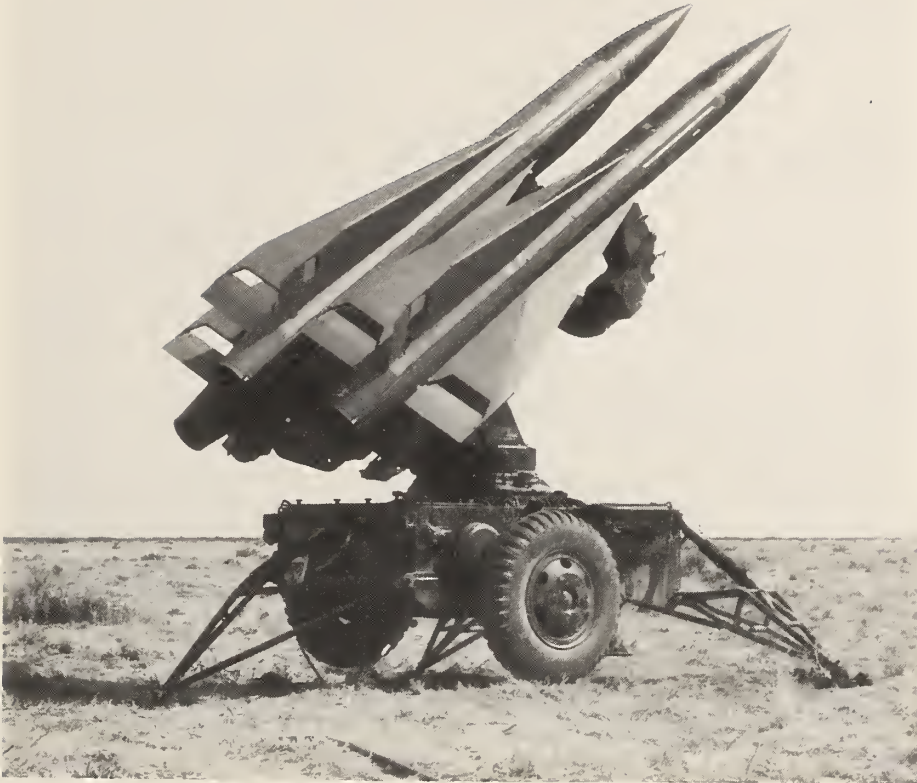
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WHY IS IT IMPORTANT? The Marine Corps has an approved requirement for a quick reaction, short range, anti-radiation weapon which is compatible with Sidewinder configured aircraft using on-board DECM equipment for threat detection. The mobile, short-range air defense systems represent a significant threat to TACAIR and attack helicopters on the modern battlefield. The SIDEARM, as a complement to the more sophisticated HARM weapon, will provide non-HARM equipped aircraft (AH-1, AV-8B and OV-10) with a point and shoot capability to suppress the close-in tactical threat.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports continued development and procurement of the SIDEARM capability.

DEVELOPER/MANUFACTURER:    TBD

## HAWK MISSILE SYSTEM



DESCRIPTION: The Improved HAWK missile system is a medium-range, low-to-medium altitude air defense missile system. It is a mobile, helicopter-transportable, all-weather, day and night air defense guided missile weapon system capable of operating in an ECM environment.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY (missiles)	900	550	550	550	550	475

WHY IS IT IMPORTANT? The HAWK is the Marine Corps' primary low-to-medium altitude air defense capability. It is organic to the Light Antiaircraft Missile (LAAM) battalion which has the assigned mission of providing surface-to-air missile defense of assigned areas of operation, or installations and vital zones, against hostile low and medium altitude air attacks.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the procurement of sufficient HAWK equipment to triad-configure each LAAM battalion (three firing batteries each with three launcher sections). The Marine Corps also supports the procurement of HAWK missiles to build 60 days of combat sustainability.

DEVELOPER/MANUFACTURER: Raytheon Corporation



## STINGER



DESCRIPTION: STINGER is a man-portable, visually-aimed, shoulder-fired, surface-to-air defense weapon system designed to counter the low altitude air threat. The weapon can engage jet and helicopter aircraft from all aspects, including head-on, to provide a true point defense capability. STINGER employs a passive infrared homing missile with an advanced guidance system which assures precision intercepts forward of the jet plume of high-speed aircraft. The STINGER system is designed to meet the air threat of the 1980's. It also incorporates an Identification Friend or Foe (IFF) interrogator and advanced infrared counter-measures circuitry.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
QTY (missiles)	1391	800	1159	1884	2198	2134	1428

WHY IS IT IMPORTANT? STINGER is replacing the aging REDEYE missile system which has greatly exceeded its seven-year shelf life. Additionally, STINGER will eliminate inherent limitations which currently exist in the REDEYE system. This system provides close-in, low altitude air defense capability for maneuvering combat elements.

WHAT IS THE MARINE CORPS POSITION? The REDEYE missile, because of its age and limitations, must be replaced by STINGER as soon as possible. The success of maneuvering combat elements relies heavily on the STINGER system and its capability to defend against the ever-increasing low altitude threat.

## TACTICAL AIR OPERATIONS MODULE



DESCRIPTION: The Tactical Air Operations Module (TAOM) (AN/TYQ-23) is a joint Marine Corps/U. S. Air Force program designed to develop and produce operations modules which, when employed independently or in groups of up to five, provide for air defense and air traffic control and coordination as required by the MAGTF during combat operations.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY (modules)	0	4	9	10	10	13

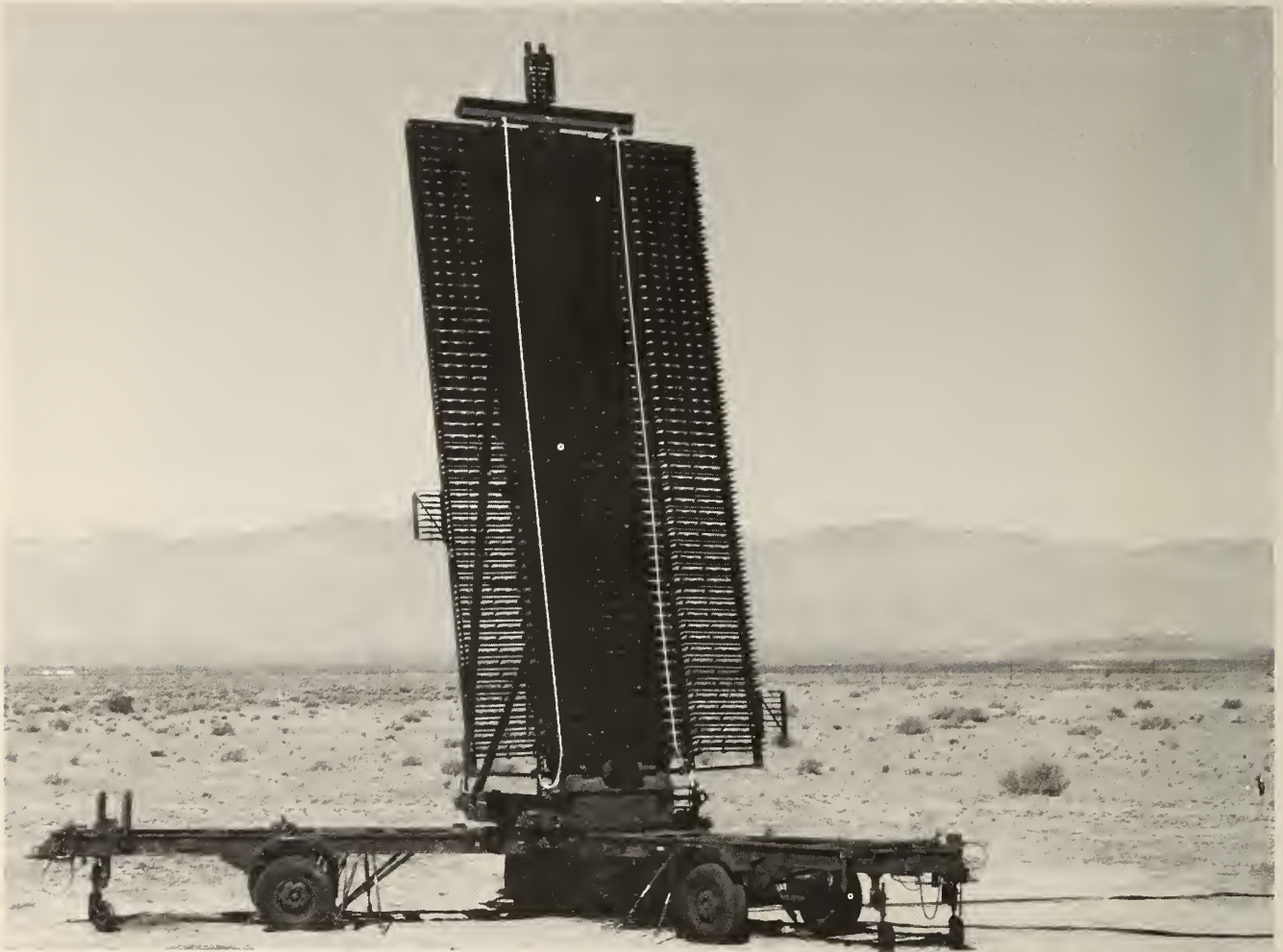
WHY IS IT IMPORTANT? The TAOM program will replace aging equipment which will be logistically unsupportable in 1985 and beyond. The equipment developed is of modular design. This design allows for the phased introduction of capability into an operating area, and a rapid increase in capability with the addition of identical modules. The TAOM program is essential to the USMC deployment concept. TAOM requires fewer technical personnel to operate. It offers training improvements at a reasonable cost and a reduction in the strategic lift requirement. Availability is increased due to improved system reliability and ease of repair. The modules will have the operational capabilities to perform the required functions on the modern battlefield. The procurement profile will provide modules required to equip each Marine air control squadron with four modules, to improve Tactical Air Command Center (TACC) capabilities, and to support training.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps has requested the AN/TYQ-23 in the FY86 budget. An IOC of FY88 is planned.

DEVELOPER/MANUFACTURER: Litton Corporation



AN/TPS-59 RADAR



DESCRIPTION: The AN/TPS-59 is a long-range, air-surveillance radar used with Marine air control squadrons.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
QTY (units)	10	6	5	-	-

WHY IS IT IMPORTANT? The AN/TPS-59 was developed for the Marine Corps and represents the leading edge of radar technology. The radar is an all solid-state, long-range, three-dimensional, air-search radar that demonstrates a reliability far in excess of equipment in the field today. The radar incorporates a 300-mile capability which is consistent with the operational requirement. The TPS-59 is the primary radar input for the TAOM. IOC is August 1985.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports the TPS-59 radar and considers it essential to operations in the high threat sophisticated electromagnetic environment of the modern battlefield.

DEVELOPER/MANUFACTURER: General Electric



AVIATOR'S NIGHT VISION SYSTEM (ANVIS) AN/AVS-6

DESCRIPTION: The ANVIS system provides an image intensifier specifically designed for aviators. The system provides light-weight design, "look-around" peripheral vision, easy installation, and enhances safe aircraft operation during night operations at very low ambient light levels.

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88

(QTY)                      1344       808       847       -

WHY IS IT IMPORTANT? ANVIS provides the helicopter aviator the capability, under low ambient light conditions, to fly low and fast almost as if in daylight conditions. This provides a significant capability for night operations in a hostile environment without the use of external light sources.

WHAT IS THE MARINE CORPS POSITION? That sufficient goggles be procured for helicopter aircrews as rapidly as possible. Applications for high performance fixed-wing aircraft are being considered and are under evaluation at this time.

DEVELOPER/MANUFACTURER:    Varian/ITT/Hughes

## HAVE QUICK ANTI-JAM COMMUNICATIONS

DESCRIPTION: Have Quick (HQ) anti-jam communications consist of UHF radios (airborne and ground) with a frequency hopping capability to provide a degree of anti-jam voice communications protection. Incorporation into Marine Corps aircraft and command and control agencies will greatly enhance war fighting capabilities. HQ will be incorporated into the Navy standard AN/ARC-182 radio's in all Marine Corps tactical aircraft.

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88    FY89    FY90

R&D (\$ Millions)	1.02	1.08	1.13	0.26	0.05	0.02
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WHY IS IT IMPORTANT? Incorporation of HQ will greatly enhance war fighting capabilities in the conduct of offensive and defensive air missions. The present lack of reliable anti-jam communications in a jamming environment.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports the program. An initiative will be submitted for installation of HQ capable AN/ARC-182 radios in all Marine Corps tactical aircraft.

MANUFACTURER:    Rockwell International/Collins Telecommunications

## CONTINGENCY SUPPORT PACKAGE (CSP)

DESCRIPTION: CSPs consist of aircraft test/support equipment, aviation repair parts, mobile facilities/maintenance shelters and people. The packages are designed to provide an intermediate maintenance capability to specific types, models and series of aircraft when deployed away from their parent Marine Aircraft Groups (MAGs) for extended periods of time. This procurement provides CSP's for the following aircraft: KC-130, F/A-18, A-6E, EA-6B, OA-4M, CH-46E, UH-1N, OV-10, MV-22A.

PROCUREMENT PROFILE:    FY87        FY88        FY89        FY90        FY91

Navy POM 87 Submit-----

WHY ARE THEY IMPORTANT? Under present guidance, the requirement exists to detach and deploy aircraft from their parent MAGs to ACEs. CSP's provide the peculiar equipment, facilities and supply support necessary for the MAB ACE to function as "Host" Intermediate Maintenance Activity (IMA) for fixed/rotary winged aircraft that they would not normally be capable of supporting. Additionally, CSP's will be computed as supplemental allowances to already existing assets, therefore providing the parent MAG with a greater flexibility to meet different contingency scenarios.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps considers the CSP program significant to the success of the MAGTF concept and has placed a high priority on its acquisition.

DEVELOPER: U.S. government



## 10 DAY FLY-IN "O" LEVEL SUPPORT PACKAGES

DESCRIPTION: Supply support packages developed by the Aviation Supply Office, Philadelphia, PA that identify supply parts normally removed and replaced at the organizational (squadron/detachment) level maintenance activity.

PROCUREMENT PROFILE: Presently being procured into Navy wholesale stocks utilizing the Navy Stock Fund. Packages will be positioned as protected stock additives to MAGS Aviation Consolidated Allowance Lists (AVCAL) commencing in FY86. Estimated completion is Fourth Quarter FY87.

WHY ARE THEY IMPORTANT? The ten day Fly-in "O" level support packages were basically designed to support the Fly-in Echelon of aircraft in the MPS brigade. The supply parts flown in with the aircraft will combine with the "O" level aviation support equipment off loaded from the pre-positioned ships. This combination of assets is designed to maintain the readiness and sustainability of the deployed aircraft until the intermediate maintenance/supply capability arrive in the theater of operation, on the TAVB (IMA/Supply Capable Ship).

WHAT IS THE MARINE CORPS POSITION? The Marine Corps was the driving force that promulgated the ten-day fly-in "O" level support packages and considers them an integral part of the MPS brigade logistics package.

DEVELOPER: U.S. government

## PART 3

### COMBAT SERVICE SUPPORT ELEMENT

This section describes Marine Corps programs which are designed to provide MAGTF commanders with the necessary logistics support to carry out their assigned mission.

The most comprehensive of the programs is the Field Logistics System (FLS). The Marine Corps FLS is an integrated program which provides intensive life cycle management of selected combat service support equipment to assure success in logistically supportable amphibious operations, while exploiting the benefits of containerization. The system is designed around international dimensional standards in order to be able to use all modes of transportation, especially the container-capable merchant fleet. Major subsystems of FLS are shelters and containers, motor transport, service support and material handling equipment. The goals of the system are to reduce manpower; to lower equipment acquisition, logistics support costs, and shipping space requirements; and to decrease training needs while enhancing the effectiveness of the logistics support system and the readiness posture of Marine Corps amphibious forces.

In addition to FLS, the Marine Corps has other programs designed to improve the Marine Corps' capability to provide logistics support to the MAGTF commanders.

The logistics equipment addressed in this section are:

- Marine Corps Expeditionary Shelter System (MCESS)
- Intermediate Size Containers
- High Mobility Multipurpose Wheeled Vehicle (HMMWV)
- Medium Tactical Truck
- Logistics Vehicle System (LVS)
- 70-Ton Heavy Equipment Transporter
- Crash Fire Rescue Vehicle
- Lightweight Amphibious Container Handler (LACH)
- Rough Terrain Container Handler (RTCH)
- Wet and Dry Gap Bridging
- Fuel/Water Storage and Pump Modules (SIXCONs)
- Reverse Osmosis Water Purification Unit
- Tactical Steam Cleaner
- Tactical Fuel System
- Small Employment Excavator (SEE)

## GROUND AMMUNITION PROGRAM

The Marine Corps FY86 ground ammunition budget request totals \$518 million. This represents an increase of \$64 million (14%) over last year's budget. The FY86 program is broken down by ammunition category as follows:

<u>Item</u>	<u>Funding Request (\$ Millions)</u>
155mm Artillery	233.6
8 inch Artillery	11.2
Tank <u>1/</u>	0.0
Mortar	28.8
25mm	7.9
Small arms	12.8
Other <u>2/</u>	223.8
<hr/> TOTAL	<hr/> 518.1

1/ Current assets of 105mm tank ammunition are sufficient to carry the Marine Corps through until procurement of the M1A1 tank, which has a 120mm main gun.

2/ Includes pyrotechnics, grenades, etc.

In keeping with DOD guidance, the Marine Corps program stresses readiness and sustainability. The current program allows for a significant increase in our inventory as well as adequate levels of training ammunition to allow sufficient practice rounds to maintain readiness. The 155mm artillery line represents a significant investment both in terms of quantity and technological improvement. The Marine Corps is purchasing increasing amounts of artillery-delivered munitions for area denial missions. The 155mm Area Denial Artillery Munition (ADAM) is a projectile that delivers submissiled antipersonnel mines from the 155mm howitzer. The projectile contains various antipersonnel mines which are expelled from the rear of the round after ground impact. The Remote Antiarmor Munition (RAAM) is an artillery-delivered round that contains a payload of nine scatterable anti-tank mines. This munition has been designed with both a target sensing and self-destruct capability. Both the ADAM and RAAM rounds have this self-destruct feature which works on either a long (24 hr) or short (6 hr) fuze setting. The self-destruct feature provides access to friendly troops after an appropriate time has elapsed. Both types effectively preclude enemy access to terrain in both offensive or defensive operations.



The highlights of the artillery ammunition request are shown below:

#### Artillery Ammunition

<u>Item</u>	<u>Quantity</u>	<u>\$ Millions</u>
155mm ADAM-long	9286	38.9
155mm ADAM-short	9994	41.8
155mm RAAM-long	8774	14.0
155mm RAAM-short	9836	15.6
Copperhead	1535	52.1
155mm Smoke	24979	9.3
155mm High Explosive	181115	80.2
8 inch	12146	11.2

Much of the currently programmed small arms ammunition procurement is tied to the acquisition and fielding of new weapon systems. This fact is demonstrably depicted below:

#### Small Arms Ammunition

<u>Item</u>	<u>New System</u>	<u>Quantity (000's)</u>	<u>\$Millions</u>
5.56 Ball	M16A2	48500	9.6
5.56 Linked	SAW	1617	6.0
5.56 Linked Blank	SAW	13324	3.3
40mm Linked	MK19	1294	15.3
83mm High Explosive	SMAW	45	52.4
83mm Practice	SMAW	14	13.4

Viewed as an essential element of a balanced program, the FY86 ground ammunition request complements the overall Marine Corps program and ensures operational readiness. The FY86 budget request will provide an additional four days of ammunition, which is the unit of measure used by the USMC to measure sustainability in this area. The FY86 request will increase our present inventory to approximately 54 days of ammunition. Our projected near-term procurement should allow us to achieve our interim objective of 60 days of ammunition.

## MARINE CORPS EXPEDITIONARY SHELTER SYSTEM (MCESS)

DESCRIPTION: MCESS consists of a small and large shelter family. The Small Shelter Family consists of an 8' x 8' x 20' General Purpose Rigid, a General Purpose Knockdown, and an Electromagnetic Interference Shielded (EMI). Also included are an 8' x 8' x 10' EMI, a Complexing Kit, and a Joining Corridor. Small Rigid Shelters are fabricated of aluminum paper honeycomb panels. They can be transported on container ships, are lightweight, have a long service life, and have been approved as standard DOD shelters. The Large Shelter Family is in development. The family will consist of soft structures in sizes suitable for aircraft maintenance, vehicle maintenance, and supply storage facilities. First procurement of these shelters is scheduled for FY88.

### SMALL SHELTER FAMILY

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
QTY	368	870	326	1546	1367	191	192

WHY IS IT IMPORTANT? The MCESS is a family of expeditionary tactical shelters, joining corridors, and complexing kits which provide environmental protection for designated functions in support of USMC operations worldwide. The family is composed of shelters which can function in units of one or be complexed together to serve any function desired or required. The shelters will provide maintenance and warehousing facilities primarily for combat service support organizations. They can be used for medical, maintenance, communications, and various service support functions.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the DOD standardization efforts to develop common shelters. The Marine Corps small rigid shelter family has received DOD approval.

MANUFACTURER Small Shelters: Brunswick Corporation, and Gichner Mobil Systems  
(Prototype): Large Shelters: SAPN, INC., RUBB, INC.

INTERMEDIATE SIZE CONTAINERS  
(INSERTS, PALCONS, AND QUADCONS)

DESCRIPTION: Weatherproof, reusable prefabricated containers.

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88    FY89    FY90

QTY                      3860    4600    10000    10700    10600    10508

WHY IS IT IMPORTANT? These containers will provide a weatherproof, secure storage and transport function for organizational property and consumable supplies. They are durable (15-year life expectancy) and can be arrayed to conform to international transport standards. The containers are essential to the combat readiness of all FMF units.

WHAT IS THE MARINE CORPS POSITION? These containers substantially enhance the deployability of FMF units. They will eliminate the labor-intensive requirements currently driven by existing wooden mount-out boxes and pallets. Their addition to the Marine Corps inventory will decrease mount-out response time and lessen manpower considerations (now required for box fabrication and maintenance).

MANUFACTURER: Engineered Air Systems Inc.



## MEDIUM TACTICAL TRUCK

DESCRIPTION: The M939 5-ton truck series consists of cargo, tractor, dump, and wrecker variants. The vehicles are equipped with a diesel engine, automatic transmission, complete air brake system, three-man cab, and a tilt hood.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
QTY	2668	396	0	-

WHY IS IT IMPORTANT? These 5-ton 6x6 trucks are a product improvement of a truck introduced into the Army in 1970. The Marine Corps did not acquire the older vehicle but maintained a fleet of rebuilt 5-tons procured in the 1960 time frame. These vehicles have exceeded their life expectancy and require immediate replacement.

WHAT IS THE MARINE CORPS POSITION? The current fleet of M39 5-ton vehicles are overage, obsolete and maintenance-degraded. Additionally, current assets can only satisfy 47% of Marine Corps mission requirement due to critical Table of Equipment (T/E) shortages.

## LOGISTICS VEHICLE SYSTEM (LVS)



DESCRIPTION: Consists of a front-powered unit and four interchangeable rear units, eight-wheel drive, diesel engine, and automatic transmission. It is articulated, has a 60" fording capability without fording kit, weighs 26000 lbs. and has 85 percent piece part commonality with the U.S. Army's Heavy Expanded Mobility Tactical Truck (HEMTT).

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88

QTY                            633      360      532      77

WHY IS IT IMPORTANT? The LVS is a family of combat support vehicles designed to replace overage, oversize, diverse, and T/E deficient items with a tractor and four interchangeable rear body units (container and cargo trailers, recovery trailer unit and fifth wheel). LVS is air-transportable and its dimensional standardization permits container ship transport. LVS design features provide enhanced cross-country mobility required to move weapons systems and provide logistics support for operating forces.

WHAT IS THE MARINE CORPS POSITION? This vehicle system must be procured to support the mobility requirements of the operating forces. Required operational capabilities cannot be maintained with current motor transport equipment.

DEVELOPER/MANUFACTURER: OSHKOSH

## 70-TON HEAVY EQUIPMENT TRANSPORTER

DESCRIPTION: The XM 70-Ton Heavy Equipment Transporter (HET) is currently under development/testing within the Department of the Army. The HET is a 70-ton class, low-bed, semi-trailer that will be towed by the LVS MK48/16. The HET is designed to replace the current 15-year-old, M793 tank transporter. The HET will provide limited operation on unimproved roads, trails, and cross-country.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
<u>QTY</u>	22	8	-	-	-

WHY IS IT IMPORTANT? The 70-Ton HET will replace the aging M793 which is difficult to support as a Marine Corps unique item. It will meet the requirements of transporting the M-1 and M-60 battle tanks, the AVLB, the Caterpillar 621B Wheel Tractor-Scraper, and 8' X 8' X 40' containers with ISO-bed fittings.

WHAT IS THE MARINE CORPS POSITION? The current fleet of M793 65-ton tank transporters are overage, obsolete and maintenance degraded. Additionally, current assets can only satisfy 86% of the Marine Corps mission requirement due to critical T/E shortages.

DEVELOPER: To be determined



CRASH/FIRE/RESCUE VEHICLE (C/F/R)



DESCRIPTION: The Crash Fire Rescue vehicle is a four-wheel, four-wheel drive, 1000-gallon capacity, rear-mounted diesel engine-powered truck.

PROCUREMENT PROFILE:    PRIOR       FY86       FY87       FY88

QTY                                      51            6            -            -

WHY IS IT IMPORTANT? The C/F/R vehicle provides mandatory safety requirements for passengers, crew, cargo, and aircraft arriving and departing from tactical and garrison airfields. This is a joint acquisition effort designed to reduce program costs and to provide these vehicles at the earliest possible time. This vehicle will fill T/E deficiencies and replace obsolete, overage assets.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps must procure this vehicle in order to properly support the full spectrum of flight operations (training, passenger/cargo, and tactical expeditionary operations).

DEVELOPER/MANUFACTURER:    OSHKOSH Truck Corporation

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## LIGHTWEIGHT AMPHIBIOUS CONTAINER HANDLER (LACH)

DESCRIPTION: The Lightweight Amphibious Container Handler (LACH) is a towed straddle-lift crane designed to be used at the surf line during amphibious operations.

WHY IS IT IMPORTANT? The LACH can be maneuvered through 5-foot surf from the beach into small landing craft to pick up 8 1/2' x 8' x 20' containers, weighing up to 44,800 lbs, and off-load them onto logistics trailers for movement inland. The LACH can be used in place of or as a supplement to other shoreside container transfer systems and may also be employed at inland storage areas for routine container handling. The LACH will normally be used any time the Navy's elevated causeway is inoperative or when the input to the beach exceeds that of the elevated causeway.

WHAT IS THE MARINE CORPS POSITION? Marine Corps dependency upon the use of merchant shipping for the Assault Follow-on Echelon (AFOE) during amphibious operations and the dramatic changes of merchant ships from breakbulk to containerships have forced the Marine Corps to containerize a large percentage of the AFOE cargo. The LACH will provide a capability not presently available in the Marine Corps inventory.

MANUFACTURER: General Crane and Hoist, Inc., Savannah, Georgia

ROUGH TERRAIN CONTAINER HANDLER (RTCH)

DESCRIPTION: The RTCH is a four-wheel drive, rubber-tired, diesel-powered, articulated steering tractor with a maximum lift height of 12 feet.

PROCUREMENT PROFILE:    FY85      FY86      FY87      FY88      FY89

QTY	15	27	-	-	-
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WHY IS IT IMPORTANT? The RTCH provides the Marine Corps its only capability of efficiently transporting, transferring, stacking and unstacking 8' X 8' X 20' ISO containers with a gross weight of 50,000 pounds.

WHAT IS THE MARINE CORPS POSITION? Until the development of the RTCH, the Marine Corps had extremely limited capability to handle containers. The RTCH satisfies the requirement for the handling of containers on the beach and within the marshalling area.

MANUFACTURER: Caterpillar



## WET AND DRY GAP BRIDGING



DESCRIPTION: Wet Gap: The Ribbon Bridge is a floating, modular bridge with integral superstructure and floating supports. A complete Ribbon Bridge consists of a ramp bay at each bank and the required number of interior bays to complete the bridge. One Ribbon Bridge System equates to one 276-foot bridge.

Dry Gap: The Medium Girder Bridge (MGB) is a lightweight, hand-erectable, easily transportable, and rapidly employable girder-type bridge constructed of welded aluminum alloy.

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88    FY89

QTY: Wet Gap	-	-	11	11	-
QTY: Dry Gap	39	17	-	17	-

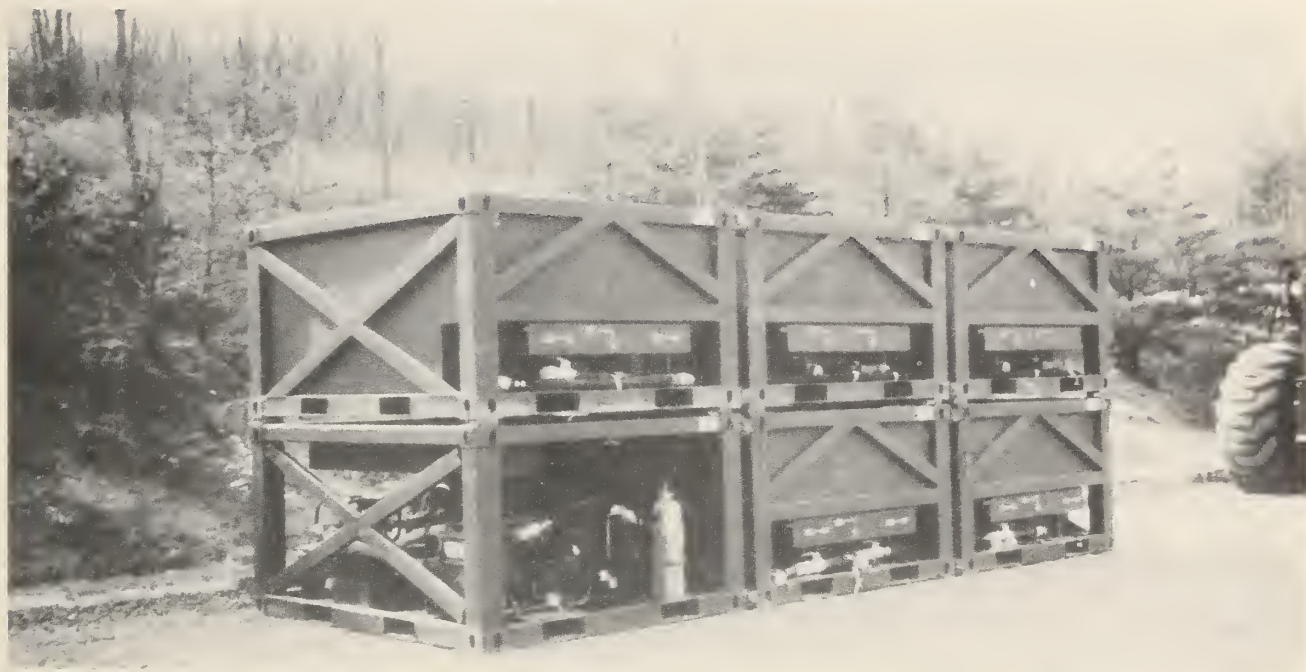
WHY IS IT IMPORTANT? Wet Gap: The current rubber pontoon M4T6 Floating Bridge is over 30 years old and obsolete. In order to meet the mobility/maneuverability characteristics of the battlefield of the 1990's, a new bridge is required. The Ribbon Bridge meets this need.

Dry Gap: The MGB provides lightweight, easily transportable, two-girder deck bridge capable of supporting class 60 loads of wheeled or tracked vehicles across 100-foot spans or 162-foot spans when employed with link-reinforcing set. The MGB can be handled by four-or six-person teams. Distinct advantages over existing bridges include reduction of transport requirement, construction time, logistics support problems, and personnel required for erection.

WHAT IS THE MARINE CORPS POSITION? Procurement of both the Ribbon Bridge and MGB are essential to the MAGTFs capability to meet the maneuverability requirements of the modern battlefield.

MANUFACTURER:    Wet Gap: TBD  
                         Dry Gap: Fairey Engineering Ltd., UK

## FUEL/WATER STORAGE & PUMP MODULES (SIXCONS)



DESCRIPTION: The SIXCON Fuel/Water Storage Modules provide the capability to store and transport up to 900 gallons of fuel or water in a single module. The SIXCON Pump Module provides the capability to pump fuel or water from SIXCON storage modules at a rate of 125 gallons per minute. Each module has forklift tineways on all sides and can be helolifted, and transported on trucks or containerships.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
<u>FUEL/WATER STORAGE</u>	<u>F W</u>	<u>F W</u>	<u>F W</u>	<u>F W</u>
MODULES				
QTY	428/700	108/325	196/325	507/18
 FUEL/WATER/PUMP				
MODULES				
QTY	158/402	100/0	120/0	225/13

WHY IS IT IMPORTANT? The SIXCON pump, water and storage modules were designed and are expected to fill the void left by the reduction in specialized tankers (M49/M50). The SIXCONS can be used individually or in combination of up to six modules (5 storage and 1 pump). They can be connected so that six modules form an 8' X 8' X 20' container.

WHAT IS THE MARINE CORPS POSITION? With the advent of these modules comes a greatly increased capability and flexibility. Both fuel and water can be transported to forward elements of a MAGTF in variable quantities by the most effective means available on land or by air.

MANUFACTURER: ISOMETRICS, PEABODY-BARNES

REVERSE OSMOSIS WATER PURIFICATION UNIT (ROWPU) - ENHANCED

DESCRIPTION: The enhanced ROWPU is a self-contained unit, ISO configured in 8' X 8' X 10' shipping frame. These are the same transport dimensions as the present 600 gallons per hour (gph) ROWPU.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
(QTY)	50	125	75	31

WHY IS IT IMPORTANT? The enhanced ROWPU is designed to produce potable water for the FMF from salt, brackish, and fresh water sources at the following rates: 1,200 gph from salt water; 1,800 gph from brackish water; and 3,600 gph from a freshwater source. The enhanced ROWPU will replace the current 600gph unit on a one for two basis substantially reducing quantities, cube and square.

WHAT IS THE MARINE CORPS POSITION? Procure the enhanced ROWPU.

MANUFACTURER. TBD



## TACTICAL STEAM CLEANER

DESCRIPTION: The Tactical Steam Cleaner (TSC) is a portable steam cleaning system that can be hand carried by two Marines or transported by vehicle. The water pump is powered by a two-cycle engine. The heater is a convection type heater that burns gasoline as a primary fuel with DF2, JP4 or kerosene as alternate fuels. The TSC is capable of supplying hot water or steam in the pressure range of 22 to 130 psi at either 113°F or 248°F through one or two cleaning wands.

PROCUREMENT PROFILE:    PRIOR      FY86      FY87      FY88      FY89

QTY                              123              60              80              80              73

WHY IS IT IMPORTANT? The TSC will provide the capability of cleaning motor transport equipment and subassemblies prior to performing maintenance which facilitates easier and more effective maintenance operations. The Marine Corps will procure this through a U.S. Air Force contract. The TSC will fill T/E deficiencies and replace obsolete, overage assets.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps must procure this item to replace the maintenance-intensive JOM-1 Steam Cleaner, the interim replacement Souix 200 Commercial Steam Cleaner, and to fill current T/E deficiencies.

DEVELOPER/MANUFACTURER: Engineered Air Systems, Inc.

## TACTICAL FUEL SYSTEM

DESCRIPTION: The equipment developed will become part of the Marine Corps total expeditionary bulk fuel handling capability. This development work will culminate in a bulk fuel system that will provide a MAF with an extended cross-country transfer capability. This system will be comprised of the following subsystems:

PUMP ASSEMBLY: An improved pump set with automatic controls driven by a 102-HP turbocharged diesel engine. The pump will have a rating of 800 gpm at 125 PSI discharge pressure.

HOSEREEL SYSTEM: Consists of a base platform, power pack and replaceable hose reels. Hosereel will contain a minimum of 2000 feet of lightweight, collapsible six-inch hose in 500 foot lengths.

BEACH INTERFACE UNIT (BIU): Provides a six-inch strainer assembly that will interface with the Navy's Offshore POL Discharge System (OPDS). The BIU will replace the six-inch strainer basket.

TACTICAL FUEL DELIVERY SUB SYSTEM: Will support maneuver elements within a MAGTF. The subsystem will include a new model 500-gallon collapsible fuel drum, dry-break connections, pumping assemblies and manifolding to enable tactical aircraft and ground vehicles to transport fuel to forward operating forces.

TACTICAL EXTENDED RANGE FUEL TANK (TERFT): Consists of modular external fuel tanks that combat and tactical vehicles can carry for range extension. The collapsible fabric tanks will vary in capacity from 20 to 50 gallons.

AIRCRAFT EXPEDIENT REFUELING SUBSYSTEM: Will replace the existing fuel distribution system for use at expeditionary airfields. It will incorporate new hose and coupling technology as well as the latest in fuel conditioning equipment and pump controls.

WHY IS IT SO IMPORTANT? A requirement exists to enable the MAF to accept large quantities of fuel from tankers and to transfer and dispense the products to forward operating units. Fuel delivery vessels must be unloaded rapidly. The increased tempo and intensity of combat operations, require a fuel system that will be responsive to the commander's needs.

WHAT IS THE MARINE CORPS POSITION? These series of research and development efforts, in progress or planned, will result in the introduction of an improved tactical fuel system for the Marine Corps.

DEVELOPER: U.S. Marine Corps/U.S. Army

SMALL EMPLACEMENT EXCAVATOR (SEE)



DESCRIPTION: The Small Emplacement Excavator (SEE) is a lightweight rubber-tired tractor equipped with a front end loader and a backhoe excavator.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
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<u>QTY</u>	60	70	-	-	-
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WHY IS IT IMPORTANT? The SEE will have the capability to rapidly dig a variety of holes, pits, trenches, and earthworks to provide cover from direct and indirect weapons. It is capable of being transported by the CH-53 and C130 aircraft.

WHAT IS THE MARINE CORPS POSITION? The SEE will replace the Case 580 rubber-tired tractor and will provide an increased capability for construction to the Marine Corps.

MANUFACTURER. EUCLID



## HIGH MOBILITY MULTIPURPOSE WHEELED VEHICLE (HMMWV)



DESCRIPTION: The HMMWV is a multipurpose 5/4-ton high mobility vehicle that is equipped with 4-wheel drive. There are four HMMWV variants: the TOW/carrier, Augment carrier, Cargo/Troop carrier, 2 litter ambulance, 4 litter ambulance and the Shelter carrier. It has a common chassis, a diesel engine, and automatic transmission.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
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QTY	10507	4832	743	-
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WHY IS IT IMPORTANT? The HMMWV will be the primary tactical vehicle for combat and combat support units. Its primary functions will be to support troop and weapon transport, weapons platform, reconnaissance, fire support, medical evacuation, and command, control and communication applications. This vehicle will have a 5/4 ton capacity and will replace all current 1/4, 1/2, 3/4, and 5/4-ton trucks and 1/4-ton trailers. The common engine chassis, and automatic transmission will reduce logistic burden and standardize operational/maintenance requirements.

WHAT IS THE MARINE CORPS POSITION? This vehicle satisfies an urgent requirement to replace current overage vehicles. Further, it will provide an improved anti-armor platform capability (TOW missile). The acquisition of this vehicle is a top priority of the Marine Corps.

DEVELOPER: AM General.

## SECTION IV

### PART 1

#### COMMAND, CONTROL, COMMUNICATIONS AND COMPUTERS (C<sup>4</sup>)

This section outlines command, control, communications, and computer (C<sup>4</sup>) programs intended to enhance the Marine Corps' capability to perform its assigned missions. The MAGTF has a unique C<sup>4</sup> capability. MAGTFs are organized, equipped and trained under the concept of unity of command, providing the commander complete control over all elements of the MAGTF, including ground combat, aviation and logistics elements. The MAGTF is equipped with the capability to provide austere external communications links with the Naval Telecommunications System (NTS)/Defense Communications System (DCS) and with adjacent U.S. or allied units.

The Marine Corps is in the process of developing and/or fielding the following new systems in support of battlefield C4 requirements:

- °° Position Location Reporting System (PLRS)
- °° NAVSTAR Global Positioning System (GPS)
- °° Marine Integrated Fire and Air Support System (MIFASS)
- °° Joint Tactical Information Distribution System (JTIDS)
- °° Digital Communications Terminal (DCT), AN/PSC-2
- °° Single Channel Ground and Airborne Radio Sub-System (SINCGARS)
- °° Tactical Communications Center - AN/MSC-63A (TCC)
- °° High Frequency Communications Terminal (HFCT)
- °° TRI-TAC Switches
- °° Troposcatter Radio, AN/TRC-170(V)3
- °° Deployable MAGTF Automated Services Center
- °° ADPE for the Supporting Establishment
- °° Central Processing Unit (CPU) Augmentation Program
- °° End User Computing (EUC) Equipment



## POSITION LOCATION REPORTING SYSTEM (PLRS)

DESCRIPTION: PLRS is a joint USA-USMC Program. A PLRS system consists of a master station housed in a mobile shelter, a duplicate alternate master station and up to 370 user units, which may be man, vehicle, or aircraft transportable. The master station consists of standard military computers and a tactical display. The user readout (URO) is a handheld device that displays position and navigation information, as well as limited free text messages. PLRS is crypto secure and jam resistant and will significantly assist commanders in tactical operations by providing accurate (15 meters for ground users, 100 meters for air) position location of friendly units. Small units, vehicles and aircraft will be able to rapidly determine their positions, as well as those of other PLRS-equipped units during periods of reduced visibility and in featureless terrain, as position location information is automatically reported relative to a base station throughout the PLRS network.



### PROCUREMENT PROFILE: PRIOR FY86 FY87 FY88 FY89 FY90

QTY	5	2	0	2	2	2
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WHY IS IT IMPORTANT? With the capabilities provided by PLRS, commanders at all levels will be able to better maneuver their forces and to provide more accurate and timely fire and air support to all user-equipped units.

WHAT IS THE MARINE CORPS POSITION? With the Army as lead service, an initial sole-source, 4-year, multi-year contract for the purchase of 11 1/2 systems (6 for the Marine Corps and 5 1/2 for the Army) was awarded on 29 July 1983. The Marine Corps total inventory objective is 13 systems (3 per MAF and 1 system for software support and training). A second competitive contract will be awarded in FY87 to complete attainment of the inventory objective. An IOC is planned for January 1987.

DEVELOPER/MANUFACTURER: Hughes Aircraft Company



## NAVSTAR GLOBAL POSITIONING SYSTEM (GPS)

DESCRIPTION: The NAVSTAR GPS is a satellite-based radio navigation system that will provide accurate three-dimensional position and navigation information worldwide. User units will weigh approximately 25 pounds. The Marine Corps plans to procure 276 man-pack terminals to be employed as a complementary system to PLRS. User equipment in USMC aircraft will be funded by the Navy.

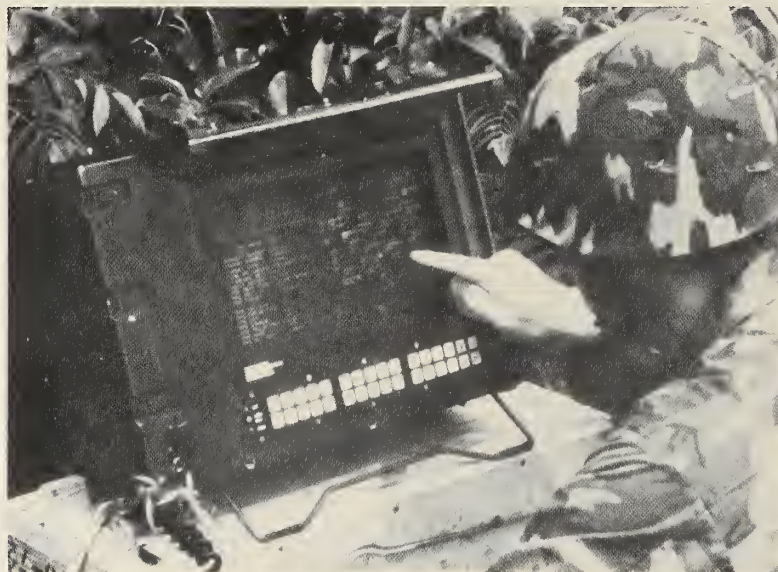
<u>PROCUREMENT PROFILE:</u>	<u>FY87</u>	<u>FY88</u>
QTY	186	90

WHY IS IT IMPORTANT? User equipment will be procured in man-pack form for use in anchoring the PLRS and in providing coverage outside the effective area of PLRS (47 Km X 47 Km). NAVSTAR GPS will also provide position/ navigation capability to units operating in less than brigade strength such as a MAU or Battalion Landing Team, and will greatly facilitate command and control of units during amphibious operations.

WHAT IS THE MARINE CORPS POSITION? Continue to participate in development on NAVSTAR GPS and to procure man-pack user terminals.

DEVELOPER/MANUFACTURER: Rockwell-Collins.

## MARINE INTEGRATED FIRE AND AIR SUPPORT SYSTEM (MIFASS)



DESCRIPTION: The MIFASS is a selectively automated tactical command and control system that provides for the coordination of mortars, artillery, naval gunfire and direct air support, to achieve more effective and responsive fire support for ground maneuver forces. MIFASS also will provide an automated capability for fire planning with associated weapons and target information management for infantry, aviation and artillery combat operation centers. It will also distribute battlefield geometric information such as boundaries, coordination lines and areas, friendly unit locations and air defense data. MIFASS is designed so that selected components may be employed at all echelons of the MAGTF. It will be located at the MAGTF headquarters, the division, the infantry and artillery regiments, and at infantry and artillery battalions, and the Direct Air Support Center of the Marine Air Support Squadron.

<u>PROCUREMENT PROFILE:</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
QTY	0	0	1/2	1	1

WHY IS IT IMPORTANT? Current manual operations in the coordination and control of supporting arms are slow and inefficient in providing fire support to maneuver elements. The manual operations are often characterized by mistakes, delays, and the improper use of available supporting arms. MIFASS will help to overcome these deficiencies via the automation of functions currently performed manually. Failure to procure MIFASS will prevent the Marine Corps from maximizing its combat potential in the 1990s.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps is developing an engineering model and will consider procurement with an IOC planned for 3rd quarter of FY91.

## JOINT TACTICAL INFORMATION DISTRIBUTION SYSTEM (JTIDS)

DESCRIPTION: JTIDS will provide users with secure, jam-resistant, voice and data communications capabilities. When integrated into a host tactical data system, JTIDS will support high-capacity, near real-time exchange of tactical information and inherent relative navigation, position location, and identification capabilities. The Air Force is developing terminals based on the basic JTIDS technology, Time Division Multiple Access (TDMA). The Navy was authorized by DoD to develop a family of enhanced technology terminals based on Distributed Time Division Multiple Access (DTDMA). Associated with the implementation and employment of JTIDS is the parallel development of Tactical Digital Information Link-J (TADIL-J), a message standard being developed by the Joint Interoperability Tactical Command and Control System (JINTACCS) program.

PROCUREMENT PROFILE: TBD

WHY IS IT IMPORTANT? Current data communications capabilities supporting tactical command and control information exchange are vulnerable to exploitation and interception and are severely degraded when employed in a jamming environment. JTIDS and TADIL-J will overcome these deficiencies and provide tactical decision makers with survivable, secure, high capacity communications capabilities in support of internal, joint and combined command and control information exchange requirements. If the JTIDS program is not supported, the joint interoperability capabilities of the Marine Corps, and a significant internal data distribution capability, will continue to rely on outdated and highly vulnerable systems.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps fully supports the expeditious achievement of a joint TADIL-J interface capability. The Marine Corps JTIDS/TADIL-J program is designed as a comprehensive effort to provide tactical commanders across the battlefield with jam-resistant, high capacity, voice and data communications. While the primary emphasis, of necessity, focuses on the TAOM implementation effort, follow-on platform implementations and Marine Corps-unique development efforts cannot arbitrarily be deferred without degrading the total capabilities of the integrated Marine Corps command and control system.

DEVELOPER/MANUFACTURER: TDMA: Singer-Kearfott  
DTDMA: Hughes Aircraft Corporation



## DIGITAL COMMUNICATIONS TERMINAL (DCT)



DESCRIPTION: The DCT is a programmable, hand-held, input/output device that operates over tactical radio and wireline systems. The DCT is compatible with the BANCROFT and VINSON cryptographic systems. The device weighs 4.5 lbs and is 100 cubic inches in size. The DCT provides the operator with the capability to rapidly compose, edit, transmit, receive and display pre-formatted, free-text messages and graphic data. The DCT will expand the capabilities of the following systems with its speed and accuracy:

- MIFASS
- Tactical Combat Operations System (TCO)
- Direct Air Support Center (DASC)
- Command and control communications for Forward Anti-Air Defense (FAAD) teams
- Tactical Warfare Simulation, Evaluation and Analysis Systems (TWSEAS)

### PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88    FY89

QTY	1200	0	472	960	282
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WHY IS IT IMPORTANT? The Marine Corps needs to improve its communications in the areas of reliability, accuracy and speed. The DCT represents a quantum improvement in these areas.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports the DCT program.

DEVELOPER: LITTON

## SINGLE CHANNEL GROUND AND AIRBORNE RADIO SYSTEM (SINCGARS)

DESCRIPTION: The SINCGARS family of VHF radios will replace all VHF/FM man-pack and mobile tactical radio communications currently in the Marine Corps inventory. SINCGARS will provide anti-jam communications in the frequency range of 30.00 to 87.975 MHz and 25 KHz channel spacing. It is mission flexible for voice or data, plain or cipher text and remote control operation. Utilizing the combination of low, medium and high power selections and a frequency hopping Electronic Counter Countermeasures (ECCM) capability, SINCGARS has the additional feature of providing a low electronic signature to elude current enemy direction finding (DF) equipment.

<u>PROCUREMENT PROFILE:</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
QTY	0	6360	6275	6275	6150

WHY IS IT IMPORTANT? If not procured, the Marine Corps will be forced to rely upon radio equipment which is over 20 years old and which has become logistically unsupportable. The present inventory of VHF/FM radios are extremely vulnerable to exploitation and interception and are severely degraded when operated in a jamming environment. The Army has discontinued procurement of existing VHF/FM radios, thereby precluding the procurement of replenishment spares and components. SINCGARS will accommodate interoperability in joint and combined operations.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports this program.

MANUFACTURER: ITT

## TACTICAL COMMUNICATIONS CENTER (TCC)

DESCRIPTION: The TCC is a semi-automatic (computer assisted) tactical message center to be used at Division, Wing, FSSG and MAF/MAB headquarters. It provides for the receipt, storage, routing, distribution, reproduction and transmission of general service record traffic within a command post and to lower, adjacent and higher headquarters. The TCC will terminate data/teletype circuits to AUTODIN, the Naval Telecommunications System, local (within the command post) teletypes or end-user computer terminals. It has the capacity for seven full-duplex encrypted circuits and eight full-duplex unencrypted circuits. All circuits will possess the capability to operate at selectable data rates of 75-2400 bits per second. Subscribers will thus have direct, on-line access to record traffic in order to receive and transmit messages.

The TCC consists of two major components; the AN/MSC-63A Communications Central and the Reproduction/Distribution Facility (R/DF). Each component can operate independently of each other and are being developed and procured separately. Both components are housed in an 8x8x10' container. The AN/MSC-63A consists of off-the-shelf hardware items such as computers, video displays, teletypes, disk units, tape units, modems, and Communications Security equipment. The R/DF will contain two commercial reproduction machines, a collator, shredder and printer. The printer can be electronically connected to the AN/MSC-63A.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY R/DF	18	13	0	0	0
QTY AN/MSC-63A	0	0	18	13	

WHY IS IT IMPORTANT? Current tactical communication center equipment is over twenty years old and is slow, unreliable and increasingly difficult to maintain. It is heavy for amphibious operations, will not interface with emerging digital transmission systems and does not meet user throughput or maximum delay requirements for record traffic.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports the TCC program.

DEVELOPER: AN/MSC-63A - Naval Oceans Systems Center (NOSC)  
R/DF - Marine Corps Logistics Base, Albany



## HIGH FREQUENCY COMMUNICATIONS TERMINAL (HFCT)

DESCRIPTION: The HFCT is a shelter-contained high frequency communication terminal which will provide two channels of voice and/or data for long-haul communications. It will provide communications from the MAGTF to major subordinate elements, between dispersed elements of the MAGTF ACE and serve as a backup to the satellite systems in joint and allied operations. The HFCT will be procured using a non-developmental approach to incorporate the most modern high frequency communication equipment available today.

PROCUREMENT PROFILE:	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
QTY	0	15	30	30	27

WHY IS IT IMPORTANT? The Marine Corps currently has limited capability to provide long-haul communications by any means other than satellite. Additionally, communications support for multiple and/or widely dispersed expeditionary airfields is dependent upon aged and low powered equipment. Thus, current operational capabilities are constrained by the absence of reliable, long-haul communications terminals.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports procurement of the HFCT.

DEVELOPER/MANUFACTURER: To be competitively determined.

## TRI-TAC SWITCHES

DESCRIPTION: The TRI-TAC switches, also known as the Unit Level Circuit Switch (ULCS) program, are a family of switches being developed under the cognizance of the Joint Tactical Communications (TRI-TAC) Office. The switches include the SB-3865, AN/TTC-42 and AN/GYC-7.

SB-3865 - A team-transportable 30-line automatic telephone switching unit stackable to 90 lines that will service the new family of digital telephones. It will be used at battalion and higher levels within the FMF.

AN/TTC-42 - A 150-line transportable, shelterized, automatic switching central. It will interface with the SB-3865 and will provide secure and non-secure digital and limited analog telephone service. It will be operational within the communications battalion, communications squadron, division communications company, FSSG communications company and artillery regiment.

AN/GYC-7 - A 12-line automatic tactical message data switch providing secure switching of digital data. It will be configured into three two-man transportable packages and will be utilized at regiment and higher FMF levels.



<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY (SB-3865)	25	144	129	102	89
(AN/TTC-42)	4	24	17	16	14
(GYC-7)	-	-	-	0	90

WHY IS IT IMPORTANT? The Marine Corps is transitioning from manual, analog, unsecure switches to automatic, digital, cryptographically-secure capabilities. The TRI-TAC switches will provide all of the next generation of USMC switches as well as interoperability in joint and allied operations.

WHAT IS THE MARINE CORPS POSITION? The USMC supports these programs and will make a procurement decision on the unit level message switch commensurate with the production of MIFASS.

MANUFACTURER: ITT

## TROPOSCATTER RADIO, AN/TRC-170(V)3

DESCRIPTION: The AN/TRC-170(V)3 troposcatter radio will provide the capability for Super High Frequency (SHF) transmission and reception of both multichannel digital voice and data traffic. The AN/TRC170(V)3 will be used at MAF, Division, and Wing levels, providing cross-service interoperability, replacing the AN/TRC-97 and AN/GRC-201 radios. The AN/TRC-170 will provide troposcatter transmission capability for 32 channels of bulk-encrypted voice, record and data traffic.

<u>PROCUREMENT PROFILE:</u>	<u>FY90</u>	<u>FY91</u>
QTY	32	90

WHY IS IT IMPORTANT? If the AN/TRC-170 is not procured, it will be necessary to retain the present AN/TRC-97 in service well beyond its service life. The AN/GRC-201 will not adequately accommodate the expected volume of traffic to be generated within the all-digital, TRI-TAC communication system. In addition, the new command and control equipment being procured will exceed the capacity of multichannel and switching equipment at higher headquarters.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports this program.

DEVELOPER/MANUFACTURER: Raytheon



## DEPLOYABLE MAGTF AUTOMATED SERVICES CENTER

DESCRIPTION: This program provides a capability for organic automatic data processing support for major MAGTF units when deployed.

The concept of a self-contained, van-mounted data processing capability will be tested during deployment exercises in FY84 and FY85. The results of these tests will be analyzed and refined to develop competitive specifications so that nine deployable MASCs can be procured.

The MASC replacement is directed toward a capability to support new Automated Information Systems (AISs) while deployed (e.g., M3S, REAL FAMMIS).

<u>PROCUREMENT PROFILE:</u>	<u>FY85</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY	-	-	3	6	-	-

WHY IS IT IMPORTANT? Operation of Class I systems (standard AISs in use Marine Corps-wide) for deployed Marine Corps units must be supported by a deployable MASC, similar in function to the Automated Service Centers supporting non-FMF units.

MASCs must have the capability to rapidly relocate to provide data processing support to deployed MAGTFs. MASCs depend upon the Marine Corps Central Design and Programming Activities (MCCDPAs) for programming and technical support. As the MCCDPAs transition to new operating systems and new AISs are implemented, support of the newer AISs will require an increased processing capacity.

WHAT IS THE MARINE CORPS POSITION? This program is essential to Marine Corps management and AIS operations in a deployed or combat environment. It will be the highest priority acquisition of automatic data processing equipment in the FY85-86 timeframe.

DEVELOPER/MANUFACTURER: It is anticipated that the automatic data processing equipment (ADPE) will be acquired from the IBM Corporation while the trailers/vans will be acquired from the U. S. Army. A separate contract will be issued to integrate the ADPE into the trailers/vans.

AUTOMATED DATA PROCESSING EQUIPMENT FOR THE SUPPORTING  
ESTABLISHMENT (ADPE-SE)

DESCRIPTION: The ADPE-SE Program will replace obsolescent ADPE that has become increasingly difficult to maintain. This program will also provide ADPE capabilities to sites which do not currently have organic computer support. Twenty-one sites with various ADPE requirements are included in the program. This program is driven by the need to advance beyond the batch-oriented environment and take advantage of current, more efficient technology. The sites included in this program will be supported by the Marine Corps Data Network (MCDN) and will become remote job entry sites to the seven major ADP installations. The ADPE-SE sites will be provided with the following equipment: a host processor, tape drives, disk storage devices, printers, a computer power center, and in certain instances, a front end processor.

<u>PROCUREMENT PROFILE (Qty):</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
LEVEL I SYSTEM	2	6	2	2
LEVEL II SYSTEM (note 1)	2	2	2	1

Note 1: A LEVEL II system has all the components that a LEVEL I system contains in addition to a front end processor.

WHY IS IT IMPORTANT? The ADPE currently installed is archaic, unreliable, and very expensive to maintain. In most cases, current ADPE lacks sufficient capabilities to support new Marine Corps automated information systems currently under development. Additionally many sites do not currently have any interactive data processing capabilities. This equipment will be installed to support users throughout the Marine Corps.

WHAT IS THE MARINE CORPS' POSITION? The ADPE-SE program is essential to the development and implementation of on-line, interactive automated information systems and is a priority ADPE acquisition in the FY 85-88 time frame.

DEVELOPED/MANUFACTURER: The ADPE-SE program is an active, competitive procurement. The manufacturer will not be determined until contract award.

## CENTRAL PROCESSING UNIT (CPU) AUGMENTATION PROGRAM

DESCRIPTION: The CPU Augmentation Program is designed to increase the computing capacity of the three Central Design and Programming Activities (CDPA's) at Kansas City, Quantico and Albany, and the four RASCs at Camp Pendleton, Camp Lejeune, Hawaii and Okinawa. The development and implementation of large, interactive AIS's has driven Marine Corps computer capacity requirements well beyond current capacity. A comprehensive analysis of the current and projected workloads at each of the seven large computer installations revealed a current capacity shortfall of 37 percent and a projected capacity growth rate of over 750 percent by 1990. This program will provide large scale CPU's with the necessary supporting equipment (consoles, motor generators, etc.) and all required proprietary systems software in an effort to support computer users during this period of growth.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
CPU System (QTY)	6	5	3

WHY IS IT IMPORTANT? The upgrade of the Marine Corps' CPU capacity is critical for the successful development and implementation of new, large AIS's. The major AIS's (Real FAMMIS, M3S and SABRS) are largely interactive and therefore require a substantial increase in capacity over their batch predecessors.

WHAT IS THE MARINE CORPS POSITION? The CPU Augmentation Program is essential to the continued growth of the Marine Corps' capability to support existing data processing requirements and new, large AIS's currently under development.

DEVELOPER/MANUFACTURER: The developer/manufacturer of the CPU systems will be determined as a result of a competitive procurement process.



## END USER COMPUTING (EUC) EQUIPMENT

DESCRIPTION: The EUC Equipment Program will provide computer based equipment such as work stations, word processing equipment, and personal computers to personnel throughout the FMF, Supporting Establishment (SE) and SMCR. Commercial off-the-shelf hardware and software will be acquired to satisfy the needs identified during the requirements analysis. Desktop, portable and TEMPEST devices will be procured. The contractual vehicle development for this acquisition will be in the form of a "shopping list" to allow users to configure their systems based upon local requirements. Hardware and software needed to meet requirements can then be ordered directly off the contract by local contracting officers. IOC is targeted for November 1986.

<u>PROCUREMENT PROFILE:</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
QTY	3000	4000	4000	4000

WHY IS IT IMPORTANT? The end user computing equipment that currently exists throughout the Marine Corps is nonstandard and incompatible. FMF, SE and SMCR organizations have no organic end user computing equipment. The majority of EUC equipment is carried as plant property and cannot be deployed. Additionally, the variety of systems that exist throughout the Marine Corps requires that personnel be retrained on different equipment when transferred to a new duty station. The EUC equipment program was developed to address these issues.

WHAT IS THE MARINE CORPS' POSITION? The EUC equipment program is essential in order for the Marine Corps to realize productivity enhancement of personnel, standardization and compatibility of EUC equipment and software, and cost savings and benefits through the quantity purchase of standard items.

DEVELOPER/MANUFACTURER: The EUC equipment program will be a competitive procurement. Due to the proliferation of small computer manufacturers, it is anticipated that numerous proposals will be received in response to the EUC Equipment Solicitation Document. The manufacturer will not be determined until contract award which is targeted for September 1986.

## PART 2

### INTELLIGENCE

This section contains summary papers on the major Marine Corps intelligence system programs under development. These programs and the intelligence systems already fielded comprise the Marine Air-Ground Intelligence System (MAGIS). As new intelligence systems come under development and old systems are retired, MAGIS will continue to evolve.

These summary papers describe systems which will support the MAGTF commander in the areas of Imagery Intelligence (IMINT); Signals Intelligence (SIGINT), to include Communications Intelligence (COMINT) and Electronic Intelligence (ELINT); Counterintelligence (CI); intelligence management at the MAU and MAB levels; Electronic Warfare (EW); unattended ground sensor intelligence; and battlefield surveillance.

The new systems described herein emphasize the coming of age of Marine Corps intelligence. This modernization effort utilizes state-of-the-art technology to provide near-real-time intelligence information in response to the battlefield commander's urgent intelligence requirements.

## INTELLIGENCE ANALYSIS CENTER (IAC)

DESCRIPTION: The IAC is a semi-automated tactical intelligence system which is the heart of the MAGIS. It will be employed by the MAGTF intelligence staff to process large quantities of information into intelligence, quickly disseminate that intelligence, and more effectively manage the collection effort. Information from other MAGIS subsystems such as the Imagery Interpretation (II) segment, the TERPES segment, the ISIS and the ASIP, as well as information from external agencies, will be received and processed by the IAC into useful, timely intelligence. The IAC consists of modular segments housed in mobile, air-transportable shelters which can be moved by organic MAGTF assets.

PROCUREMENT PROFILE: PRIOR

QTY

7

WHY IS IT IMPORTANT? Recent developments in communications, reconnaissance, surveillance, and target acquisition techniques and equipment have greatly increased the capability of the FMF and external agencies to collect information of an intelligence nature. The IAC will provide the FMF with the capability to process, correlate, and disseminate this increased volume of information.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps has purchased six systems to support three MAFs, two MABs, and training and software support requirements.

DEVELOPER: Naval Surface Weapons Center, Dahlgren, VA

PRODUCTION CONTRACTOR: American Development Corporation (ADCOR),  
Charleston, SC



## ALL SOURCE IMAGERY PROCESSOR (ASIP)

DESCRIPTION: The ASIP is a mobile ground processing facility designed to receive and exploit in near-real-time Side Looking Airborne Radar (SLAR), Infrared, and Electro-optical (EO), carried on reconnaissance aircraft, as well as imagery received from national and theater sources.

PROCUREMENT PROFILE:    FY89        FY90        FY91

QTY                            2            4            2

WHY IS IT IMPORTANT? The current Marine Corps capability for processing and exploiting imagery is dedicated to hard copy (film based) products. The thrust of technology is to near-real-time soft-copy, digital imagery data linked from the sensor platform to the processing facility. Soft-copy imagery exploitation allows the photo interpreter to extract much more information than is normally attainable in film-based imagery. Data-linked digital imagery, soft-copy, computer-enhanced image exploitation and the increasing amount of digital imagery expected to be available in the future, requires that the Marine Corps move forward in the acquisition of a mobile ground processing facility able to be deployed with the MAGTF.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps will purchase eight systems to replace the Imagery Interpretation Facilities at the three Force Imagery Interpretation Units and for training and software support.

DEVELOPER/MANUFACTURER:    Goodyear Aerospace Corporation, Phoenix,  
AZ (Advanced Development Model)

## FORWARD PASS

DESCRIPTION: Forward Pass is a ground sensor data storage and relay device which works in conjunction with the Marine Corps Tactical Remote Sensor System. It consists of storage, interrogation, and display units.

° The storage unit is emplaced by hand or high-speed aircraft along with the unattended ground sensors. It collects and stores data from sensors and can be commanded to operate in various modes from real-time relay to burst transmissions.

° The interrogation unit is pod-mounted on high-speed aircraft with a control box in the cockpit. A readout command is sent from the aircraft to a particular storage unit. Upon command, the unit either transmits its stored data to the interrogation unit, where it is recorded, or data linked to a ground site. Other cockpit-generated commands include relay (go to real-time relay mode), store, reset (erase data, go to new storage sequence), or a combination of these.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
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QTY	-	1	2	-
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WHY IS IT IMPORTANT? Forward Pass provides a capability to obtain remote sensor derived intelligence without the need for continuous monitoring and solves the Range Finder (RF) line of sight relay problem. Its principal use will be in amphibious operations during the time intervals preceding the assault phase. The concept is to employ remote sensors in the AOA days or weeks preceding the prospective operations.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps will procure three Forward Pass systems, one in FY87 and two in FY88.

DEVELOPER/MANUFACTURER: Naval Aviation Center, Indianapolis, IN

## INTEGRATED SIGNALS INTELLIGENCE SYSTEM (ISIS)

DESCRIPTION: The ISIS is a modular, transportable, semi-automated system for communications intercept, DF, and tactical SIGINT analysis and reporting. This system integrates mini/microcomputer processing with current intercept receiver and radio DF technologies. The ISIS is intended to replace all existing transportable communications signal intercept and DF equipment in the Radio Battalions, less man-pack and team-portable systems. ISIS provides each battalion with twelve Communication Collection Outstations (CCO) to perform intercept and DF functions and seven Stand Alone Analysis Subsystems (SAAS) to perform SIGINT analysis. Tactical deployment of the ISIS modules is directly related to the threat but minimum configuration is considered to be three CCO's and 1 SAAS.

<u>PROCUREMENT PROFILE:</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
QTY: CCO	11	13		
SAAS	-	-	9	5

WHY IS IT IMPORTANT? With the advent of increased battlefield electronics usage and the increased tempo of combat, the Marine Corps considers computer assistance to tactical SIGINT, as incorporated in the ISIS, to be crucial for future Radio Battalion SIGINT support to MAGTF commanders. If the ISIS is not available in the field in the late 1980s time frame, the Marine Corps SIGINT direct support capability will be severely degraded.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps has a vital requirement for tactical SIGINT direct support at battalion level and above. This support must be tailored to the battlefield commander's intelligence needs during all phases of amphibious operations and subsequent operations ashore.

DEVELOPER/MANUFACTURER: Sanders Associates Inc., Nashua, NH



## ELECTRONIC INTELLIGENCE (ELINT) SUPPORT SYSTEM

DESCRIPTION: The ELINT Support System (ESS) is a modularized, semi-automated, transportable, tactical ELINT system capable of intercepting, locating, analyzing, and identifying enemy ground-based, noncommunications emitters. The initial development system will consist of three ground-based, ELINT Collection Outstations (ECOs) mounted on an organic Radio Battalion tactical vehicle. Each ECO is a computer-controlled, monopulse, precision Line-of-Bearing (LOB) and signal identification system designed to operate as a stand-alone system. It can provide information on target emitters within its field of view directly to the SAAS segment of the ISIS. System capabilities include an airborne collection platform (ACP) to be digitally netted with the ground system. The ACP will collect, analyze, process, and distribute data to the ground-based ECOs for signal correlation, analysis, and reporting.

### PROCUREMENT PROFILE:    FY88        FY89        FY90        FY91

QTY:	ECO	3	7		
	ACP		3	5	8

WHY IS IT IMPORTANT? The FMF Radio Battalion presently does not possess the capability to perform collection or exploitation of noncommunications threats. The ELINT system previously used in the FMF, the AN/TSQ-76, was issued on an interim basis pending development of an advanced system. It was obsolete in design, inadequate in frequency coverage, difficult to maintain, and lacked the mobility required to provide and maintain timely support to the MAGTF. It was deleted from the inventory in 1975.

WHAT IS THE MARINE CORPS POSITION? Employment of the ESS will fill a critical gap in the Marine Corps requirement to provide tactical SIGINT direct support at battalion level and above.

DEVELOPER/MANUFACTURER: UTL Corporation, Dallas, TX

# ADVANCED MARINE AIRBORNE SIGNALS INTELLIGENCE (SIGINT)

## SYSTEM (AMASS)

DESCRIPTION: AMASS is a highly mobile, tactical ground terminal for use with remotely-controlled airborne SIGINT sensor platforms. AMASS will provide real-time signals intelligence to the MAGTF Commander. Critical SIGINT data would be sent directly to the TAOM centers for immediate combat decisions.

PROCUREMENT PROFILE:    FY91        FY92        FY93

QTY                            2            2            2

WHY IS IT IMPORTANT? Although the Marine Corps possesses a limited non real-time ELINT Electronic Warfare Support Measures (ESM) capability in its fixed wing EW squadron, the bulk of cryptologic direct support to the ACE is provided by the ground-based Radio Battalion. AMASS will provide highly perishable information from organic, other service, and national airborne SIGINT systems reconnoitering in the area of operations.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps has the requirement to provide SIGINT data to all elements of the MAGTF. AMASS will fill a critical gap in the Marine Corps to provide signals intelligence beyond the ranges now possible with ground-based SIGINT collectors.

DEVELOPER/MANUFACTURER:    TBD

TEAM PORTABLE COMMUNICATIONS INTELLIGENCE (COMINT)

SYSTEM (TPCS)

DESCRIPTION: TPCS is a highly mobile man- or team-pack system capable of performing automated collection, DF, processing, analysis, reporting, disseminating and collection management functions.

PROCUREMENT PROFILE: FY91

QTY 1

WHY IS IT IMPORTANT? TPCS will be a logical continuation of current man-pack receiver and DF system acquisition efforts and will fill a void in current SIGINT direct support efforts, especially in the initial amphibious landing phase.

WHAT IS THE MARINE CORPS POSITION? The Radio Battalions are to provide timely and accurate tactical SIGINT to the supported commander. This support is currently performed by independent systems that are tied together via secure communications. TPCS will provide flexible intra/intersystem communication and a micro-processor terminal that will enable the Radio Battalions to provide support to smaller MAGTFs (e.g., MAU) when larger systems are not available or appropriate.

DEVELOPER/MANUFACTURER: TBD



MOBILE ELECTRONIC WARFARE SUPPORT SYSTEM (MEWSS)

DESCRIPTION: MEWSS is lightly-armored, mobile and provides both ESM and ECM in support of tactical operations. The MEWSS will intercept, determine LOB, and degrade enemy tactical radio communications.

PROCUREMENT PROFILE:    FY86        FY87

QTY                                -                12

WHY IS IT IMPORTANT? The Marine Corps currently has no lightly-armored or mobile electronic warfare capability. The MEWSS will provide the ability to support mobile operations, both in the AOA and during subsequent operations ashore.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps will procure 12 systems.

DEVELOPER/MANUFACTURER: TACOM/General Motors Company, Ontario, Canada

TEAM PORTABLE DIRECTION FINDER (TPDF) PIP

DESCRIPTION: The TPDF (AN/PRD-10) is a lightweight, rapidly deployable, intercept and radio DF system. The AN/PRD-10 provides accurate intercept and a radio DF capability to support FMF tactical operations.

PROCUREMENT PROFILE:    FY88        FY89

QTY                            12            12

WHY IS IT IMPORTANT? The AN/PRD-10 (PIP) will provide the capability to inter-net with the ISIS DF baseline and provide a frequency extension to increase its intercept capability.

WHAT IS THE MARINE CORPS POSITION? The AN/PRD-10 (PIP) fills the requirement for Radio Battalion equipment to be interoperable with ISIS and provide more timely and accurate reporting to the MAGTF commander.

DEVELOPER/MANUFACTURER:    TBD

## TACTICAL INTELLIGENCE MANAGEMENT SYSTEM (TIMS)

DESCRIPTION: The TIMS program is presently in a testbed stage with equipment fielded to selected units in September 1985. The TIMS (testbed) equipment will consist of a TEMPEST certified microcomputer, disk drive (hard and floppy), printer, communications device, and software. This equipment will weigh less than 50 pounds and is intended to provide an automated intelligence capability at the MAU/MAB level. The testbed item will be evaluated by field units for one year and user data on this equipment will be used to identify the type and quantities of equipment needed for a production model.

PROCUREMENT PROFILE: TBD

WHY IS IT IMPORTANT? The TIMS program was initiated in response to an operational deficiency identified by FMFPAC and FMFLANT.

WHAT IS THE MARINE CORPS POSITION? The operational deficiency identified by senior operational commanders requires response. TIMS is designed to satisfy these requirements.

DEVELOPER: The testbed equipment is an off-the-shelf buy from the Grid Corporation.

PRODUCTION CONTRACTOR: TBD



## COUNTERINTELLIGENCE AND SECURITY (CI&S) PROGRAM

DESCRIPTION: The CI&S program consists of three subprograms: the Technical Surveillance Countermeasures (TSCM) program, Counterintelligence Equipment Program (CIEP), and the Counterintelligence Communications System (CCS) program. All three subprograms will provide specialized equipment necessary to conduct counterintelligence operations, counterintelligence Special Operations, and Human Intelligence (HUMINT) collection operations in support of Marine Corps tactical operations and are in line with current DoD requirements.

a. The TSCM program supports DoD requirements for the maintenance of specialized equipment designed to detect Hostile Intelligence Services (HOIS)-implanted listening devices. The extent of the equipment and capabilities is classified.

b. The CIEP was established to identify and procure specific items of tradecraft equipment in support of CI Special Operations, HUMINT operations and anti-/counter-terrorist operations. Equipment purchases include classified items for communications and photography in support of these operations.

c. The CCS is a miniaturized communications system specifically designed to support HUMINT operations. The system requirements, capabilities and design features are classified.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
TSCM QTY	0	4	8	4
CIEP QTY	OTE*	OTE*	OTE*	OTE*
CCS QTY	0	0	25 Sets	0

WHY IS IT IMPORTANT? The Marine Corps requirements to support Marine commanders with counterintelligence and HUMINT support requires specialized up-to-date equipment. Currently, with the exception of TSCM, the Marine Corps does not maintain the requisite specialized equipment necessary to carry out HUMINT and CI Special Operations. The TSCM equipment update is necessary to counter the evolving HOIS threat and is designed to detect technologically advanced devices.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps will procure the items of equipment requested in the current program.

DEVELOPER/MANUFACTURER: TSCM - TBD (various)  
CIEP - TBD (various)  
CCS - Naval Avionics Development Center  
(NADC) Warminster, PA

\* Operational Testing & Evaluation

## LIGHTWEIGHT BATTLEFIELD SURVEILLANCE RADAR (LBSR)

DESCRIPTION: The LBSR is a ground surveillance radar which will be located in the Surveillance and Target Acquisition (STA) platoon of each infantry battalion and various combat support and combat service support units. The LBSR will detect and locate moving personnel and vehicles for targeting. This radar represents a significant improvement over the AN/PPS-15 radar, which is currently in the Marine Corps inventory. The LBSR has an expected maximum range of 10,000 meters which will more than triple the range capability of the AN/PPS-15. The radar weight will be cut from the 281 lbs of the AN/PPS-15, to 10-15 lbs. Maintainability and reliability of the LBSR will be improved over our current radar because of a stationary electronic scan antenna.

<u>PROCUREMENT PROFILE:</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
QTY	180	360	58

WHY IS IT IMPORTANT? Replaces the AN/PPS-15 radar which is nearing the end of its service life.

WHAT IS THE MARINE CORPS POSITION? Procure the systems requested in the current POMs.

DEVELOPER: Naval Ocean System Command, San Diego, CA

PRODUCTION CONTRACTOR: TBD

## TACTICAL REMOTE SENSOR SYSTEM (TRSS)

DESCRIPTION: TRSS is an unattended ground sensor set of equipment that provides real-time information on enemy movement, force structure, and speed and direction of movement during amphibious operations and follow-on operations ashore. The set of equipment consists of hand and air-emplaced sensors, monitors, and radio relays. The USMC has a current set of equipment, referred to as Phase III, which satisfies current ground sensor requirements. TRSS is the follow-on sensor set that will replace the current sensor set in the 1990-92 time frame. The prime objective of this project is to decrease the bulk, weight, and unit cost of system components through the exploitation of microminiaturization. Components of the TRSS are listed below:

a. Sensors. TRSS will be a complete, unattended ground sensor suite of equipment which will incorporate air and hand emplaced sensors that use a variety of detection techniques. Currently, seismic/acoustic, magnetic, and infrared techniques are employed. This project uses these techniques as a baseline, and will investigate other potential methods such as earth-tilt and imagery sensors. Sensors for special purposes, to include snow employment and NBC warning, will be evaluated.

b. Monitors and Relays. Monitors provide readout and recording of sensor data, and relays extend the operational range of the system by extending RF line-of-sight between the sensor field and the monitor site.

<u>PROCUREMENT PROFILE:</u>	<u>FY89</u>	<u>FY90</u>
QTY	1	3

WHY IS IT IMPORTANT? Replaces existing sensor equipment which is reaching the end of its service life.

WHAT IS THE MARINE CORPS POSITION? Will procure the systems requested in the current program.

DEVELOPER: Sandia National Labs, Albuquerque, NM

PRODUCTION CONTRACTOR: TBD





## SECTION V

### NAVY PROGRAMS AND SUPPORT

This section is divided into two subsections. The first subsection contains a series of point papers and program summaries that focus on naval support requirements for amphibious power projection. This gives an overview of the sealift required to support this nation's maritime strategy, and the concerted efforts of the Navy/Marine Corps Team to maximize the capability of our naval power projection forces.

The second subsection focuses on programs in the critical area of medical support for amphibious operations. Medical support programs are rapidly progressing. A \$20 Million deficit for FMF medical outfitting was halved in FY82. Each MAF must have the assets to care for 20,000 casualties -- and state-of-the-art medical equipment has been added to the inventories. As the Marine Corps has validated its need for additional medical personnel, SECNAV has increased end strength to meet that need. Two hospital ships, each with 1000 beds and 12 operating rooms, have been approved and that program's contract awards are on schedule. By 1991, we will have achieved our programming goal of 13,250 Fleet Hospital Beds, plus 2000 beds provided by two hospital ships.



## AMPHIBIOUS LIFT

Although the Marine Corps does not fund any portion of sealift assets, its role as an expeditionary force causes it to carefully monitor the status of amphibious assault shipping. The FY87-91 Defense Guidance directed the DON to program the amphibious assault lift for the assault echelons (AE) of a MAF and MAB. This mid-term objective is to be realized by the mid-1990's. The assault echelons comprise only a portion of the total MAF or MAB force structure. The remaining structure must be transported by air with the Fly-In-Echelon (FIE) and by commercial-type shipping as part of the AFOE. The Navy and Marine Corps have agreed to stabilize the stated AE lift requirements specified for the 1990's MAF and MAB in order to provide a basis for the programming of a balanced amphibious ship force structure. The stated lift requirement will provide for the simultaneous employment of a MAF(AE) and a MAB(AE).

The current MAF(AE) lift capability is dependent upon the availability of all active and reserve amphibious ships. To attain and maintain a level of amphibious assault shipping sufficient to simultaneously lift a MAF(AE) and a MAB(AE) requires continuous new construction throughout the 1990's. An outgrowth of this coordinated effort to revitalize the amphibious ship force has been the development of a number of innovative proposals for improved ship-to-shore mobility that will support a wide range of operational concepts and ensure that a credible amphibious warfare capability exists through the end of this century and beyond.



## WASP (LHD 1) CLASS

DESCRIPTION: The WASP (LHD 1) Class (LHD) is a multi-purpose amphibious assault ship. It will provide the Navy/Marine Corps Team with our most capable ever amphibious ship.

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88    FY89    FY90    FY91

QTY	1	1	0	1	1	0	1
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WHY IS IT IMPORTANT? The ship's primary mission is to embark, deploy and land elements of a Marine landing force in an assault by helicopters, landing craft, amphibious vehicles, and by combinations of these methods. LHD 1 Class has a secondary/convertible mission for sea control.

The swift forcible projection of our afloat Marine forces in the vital area of sea control, which entails seizure or defense of, 1) advance naval bases for further operations, 2) land areas dominating straits, narrow seas, 3) strategic islands/peninsulas, is of obvious importance. Flexibility has always been a predominant factor in amphibious warfare, and increased options to our commanders at sea are guaranteed with the introduction of the LHD.

The LHD, is needed to augment the LPH class helicopter assault ships (in the short term) and to replace this class in the future. The LHD will significantly increase the total lift capability, provide a flight deck for both helicopters and VSTOL aircraft, and offer a well deck for both air-cushion and conventional landing craft.

WHAT IS THE MARINE CORPS POSITION? The current level of 63 amphibious ships is inadequate to support the lift requirement for a MAF(AE) and a MAB(AE). Therefore, procurement of at least five LHD 1 class ships by 1994 is required. LHD is the linchpin to obtaining our mid-1990's lift objective.

## WHIDBEY ISLAND CLASS (LSD 41)



DESCRIPTION: The remaining three THOMASTON (LSD 28) Class ships will retire between 1985-90. The LSD 41 construction program will replace the lost lift capacity attributed to the LSD 28 Class retirements. LSD 41 will provide well deck space and have a maintenance capability for both conventional displacement landing craft and LCAC. An LSD 41 Cargo Variant (VAR) is being designed. The LSD 41 (CV) is conceptualized as an LSD 41 basic hull, optimized for cargo.

<u>PROCUREMENT PROFILE:</u>		<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
QTY	LSD41	6	2	-	-	-	-	-
	LSD41 (VAR)	-	-	-	0	1	1	1

WHY IS IT IMPORTANT? In 1967 there were 162 active amphibious ships. Today there are 63 total - including both active and reserve ships. Procurement of new amphibious ships is critical to retention of an amphibious capability. The lead ships of the Whidbey Island (LSD 41) Class (LSD 41, 42, 43) are being built by Lockheed Shipbuilding, Seattle. The contract for LSD 44 was awarded November 21, 1983 to Avondale Shipyards, New Orleans. Construction start for LSD 44 is scheduled for November 1985. Contract options for LSD 45 and LSD 46 were exercised with Avondale in November 1984. It is anticipated that contract options for the remaining two ships of the class will be exercised in November 1985.

WHAT IS THE MARINE CORPS POSITION? The current mix of 63 amphibious ships is inadequate to support the national strategy. Therefore procurement of the LSD 41 Class of ships to replace the capabilities lost with retirement of the LSD 28 Class of ships, and to provide additional lift for a MAF (AE) and a MAB (AE), is essential.

## LCAC



DESCRIPTION: The LCAC vehicle is a shipborne high-speed (40 knots), over the beach, ship-to-shore amphibious landing vehicle capable of a 60-ton (75-ton overload) payload. It is designed to lift all equipment organic to the MAGTF in an amphibious operation.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>	<u>FY91</u>
QTY	21	12	6	9	9	9	9

WHY IS IT IMPORTANT? Currently the Soviets have over 50 operational air cushion vehicles; about 100 are expected to be in their inventory by 1990. As noted in "Jane's Fighting Ship's", the U.S. has consistently procrastinated in its procurement of this capability. This air cushion vehicle would replace current pre-WWII technology landing craft, scheduled for retirement during the 1990's, with modern landing craft that offer the following advantages over current landing craft:

- Expose 70 percent of the world's beaches, vice 17 percent to amphibious operations.
- Travel in excess of 40 knots, vice 9-11 knots.
- Craft characteristics provide over-the-horizon launch capability and decrease vulnerability of the force.
- More survivable in mined waters.
- Significantly increase build-up rate ashore, thus increasing probability of assault success.

WHAT IS THE MARINE CORPS POSITION? Six LCAC are the minimum needed to provide an initial operational capability for a MAU. Since the LCAC would introduce the most significant improvement to amphibious warfare since the introduction of the helicopter, LCAC procurement is strongly supported by the Marine Corps.



## NAVAL SURFACE FIRE SUPPORT

While evolving concepts for the amphibious assault include the insertion of forces in relatively unopposed areas from over the horizon, contingencies may still require assaults on defended beaches and landing zones. Moreover, projected threat tactics, utilizing highly mobile and mechanized forces, include prompt, violent counterattacks against landing forces in the objective area. To defeat these counterattacks, and to support helicopter-borne assaults 15-20 nm inland, the range required of Naval Surface Fire Support (NSFS) systems may reach 60 nm or more, depending on ship standoff. Critically important is the rapid-response, close, continuous and all-weather (day and night) fire support needed during the first 24 hours of the operation until artillery is established ashore. The current inventory of NSFS platforms is deficient in range and lethality due to heavy dependence on 5" caliber guns.

The Marine Corps supports several near- and mid-term improvements to enhance NSFS capabilities. Near-term programs which will satisfy Marine Corps accuracy and lethality requirements are available by improvements to current capabilities. The Marine Corps fully supports the reactivation of all four Iowa class battleships. To make the battleship an even greater asset, development of an improved 16" conventional munition projectile which deploys armor-defeating submunitions promises a quantum leap in lethality. Another program, aimed at improving lethality of 5" ammunition by increased accuracy, is the semi-active, laser-guided projectile (SAL-GP) program. Both of these munition-enhancement programs are strongly endorsed by the Marine Corps.

## STRATEGIC SEALIFT REQUIREMENTS

In addition to the strategic sealift assets necessary to project the power of amphibious naval forces, a requirement exists to provide strategic sealift for follow-on forces required for their support and reinforcement. The assets available to meet this strategic sealift requirement are divided into two distinct subsets known as Fast Sealift and Sustaining Sealift.

The Fast Sealift Ships program recognizes that a requirement exists to provide a "dash" capability to rapidly transport bulk supplies and equipment from CONUS to overseas objective areas, and to reinforce deployed forces until permanent strategic lines of communication are established. The Fast Sealift Ships program provides for the acquisition and conversion of eight, high-speed, container ships to a Roll Off/Roll On (RO/RO) configuration.

Sustaining Sealift, to meet national strategic shipping requirements during periods of mobilization or national emergency, is critical to the success of a maritime strategy. The Military Sealift Command (MSC) controls U. S. sealift assets during mobilization or emergency. Sealift resources will be made available from the MSC-controlled fleet, the U. S. Flag Merchant Marine, and the National Defense Reserve Fleet. Given the importance of sustaining sealift to the conduct of a maritime strategy, MSC developed a Sealift Readiness Program (SRP). This program, similar to the Civilian Reserve Air Fleet (CRAF) Program, calls for provision of commercial ships under charter to MSC for defense use. There are currently 133 dry cargo ships and 19 militarily useful bulk containers, primarily tankers, in the program. Additionally, certain vessels presently in the National Defense Reserve Fleet have been identified for upgrade and assignment to the Ready Reserve Fleet (RRF). To date, some 62 ships have been assigned to the RRF and will be available for use within five to ten days of recall.

## MARITIME PREPOSITIONING SHIP



DESCRIPTION: The Maritime Prepositioning Ship (MPS) is expressly built to support the MPS Program, a DOD strategic mobility enhancement initiative designed to speed the administrative introduction of credible forces into possible contingency areas around the world. The mission of the MPS is to provide lift/area/volume capacity, maintenance facilities, and environmental preservation for a balanced portion of the equipment, vehicles, supplies, POL and potable water to support three MABs. A total of 13 vessels will be procured.

<u>LEASING PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
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QTY (Ships)	11	2	-	-	-
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WHY IS IT IMPORTANT? The MPS program is designed to enhance the ability of the Navy and Marine Corps to provide a wide range of rapidly deployable deterrent options, each with its own discreet signal and its own credible, fully integrated combat capability. In view of the significance of the program to a viable global response strategy, achievement of the deployment capability for the programmed MAGTFs is essential.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the Maritime Prepositioning concept and the specially designed commercial ships necessary to make it a reality. Concern for the nations's ability to move forces rapidly has been central in Marine Corps planning. MPS provides the capability to respond to crisis situations where forcible entry is not required, but when time is of the essence.



## AVIATION LOGISTICS SUPPORT SHIP (TAVB)

DESCRIPTION: The TAVB provides sealift for movement of an aviation IMA to support the deployment/employment of the ACE of a MAGTF during contingency situations. The TAVB supports both amphibious and MPS operations. A Marine Corps IMA housed primarily in mobile vans is embarked in the TAVB and brought up to a partially functional status while enroute to a contingency area. Upon arrival in the objective area, the IMA and all supporting material will be phased ashore to ensure continuity of support for the Marine ACE.

The TAVB program involves the modification of two government-owned combination RO/RO and self-sustaining containerships currently retained in the RRF. Provisions will be made in the modification to embark 183 functional shop and supply vans, 80 accessible spare part stowage vans, plus 37 other vans with non-shipboard functioning items. In addition, 300 maintenance and support personnel are embarked to activate and operate the IMA during transit and in the objective area until the operation can be phased ashore.

The RO/RO ship will be modified only to the extent required to support the partial activation of the IMA in transit and will be fully capable of returning to a resupply role when the IMA has been offloaded and the ship released by the operational commander.

PROCUREMENT PROFILE:    PRIOR    FY86    FY87    FY88    FY89

QTY (Ships)	1	1	-	-	-
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WHY IS IT IMPORTANT? Achievement of full combat capability by the ACE of the Amphibious or MPS MAGTF requires the rapid in-theater establishment of a functional IMA to perform aircraft maintenance. Because of the scarcity of strategic airlift assets to lift the IMA facilities when required, a sealift capability providing enroute and in-theater aircraft maintenance support above the organizational level is required.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports the TAVB concept. It accommodates traditional support of the deployed ACE, enhances operational flexibility, and retains all critical aircraft support assets with its operating forces.

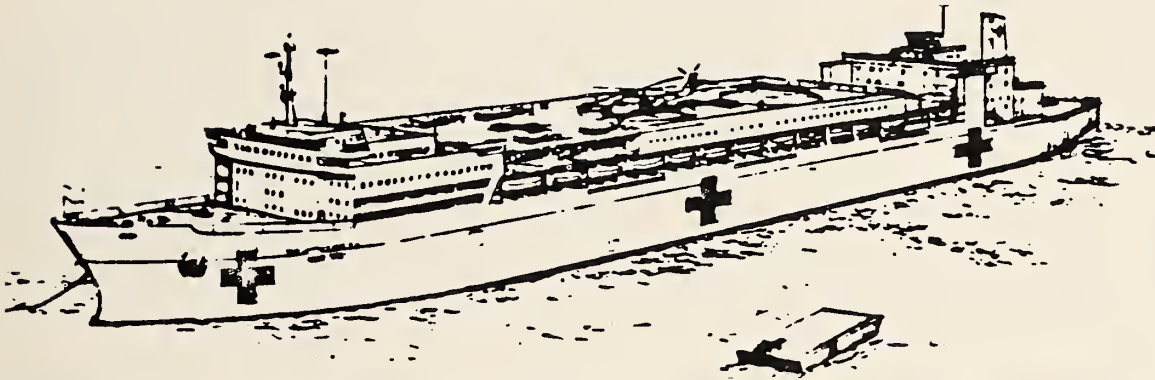
## MEDICAL SUPPORT

The timely provision of adequate wartime medical support to the Fleet Marine Force requires a wide range of expeditionary medical facilities. These facilities must be maintained at a high level of readiness in terms of trained manpower and logistics preparations. As a force in readiness, the FMF's mission to respond to global contingencies dictates that medical support facilities must be strategically mobile and capable of rapid expansion with MAGTF growth. Medical support assets should be sufficient overall to support three active MAFs while retaining the capability to be sized and packaged for employment with task organized MAGTFs. The structure of medical support must include rapidly deployable afloat facilities capable of providing support immediately upon arrival in the AOA.

The following subsection provides an overview of FMF medical support requirements and descriptions of program actions in the critical area of expeditionary medical care.

## TAH

### HOSPITAL SHIPS TO SUPPORT CONTINGENCY OPERATIONS



DESCRIPTION: On 29 June 1983, the DON awarded a contract to APEX Marine Corp./National Steel and Shipbuilding Co. of California to convert one tanker into a hospital ship with an option for a second ship conversion. Conversion to a 12-operating room/1000-bed hospital ship is in progress and delivery is projected for October 1986. Delivery of the second ship is projected for July 1987.

Upon delivery the ships will be maintained in a reduced operating status, with the ability to mobilize all civilian operating personnel, all key medical personnel plus necessary support, and a 30 day supply of consumables within 5 days. Secondly, the hospital ships could provide full hospital service assets available for use by other U.S. government agencies involved in support of disaster relief operations on a worldwide basis.

#### PROCUREMENT PROFILE:    FY83        FY84        FY85

QTY (ships)	1	1	-
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WHY IS IT IMPORTANT? A hospital ship capability is required to support a MAF amphibious assault. During the initial stages of the amphibious assault, neither the organic medical assets of the Medical Battalion, nor the medical support provided by the Navy can be effectively established ashore to receive and adequately treat initial combat casualties. These facilities require a large relatively secure area and sufficient time to phase ashore and establish operations. The medical facilities aboard our combatant ships, although adequate in quality, are simply incapable of handling large numbers of combat casualties. Only the hospital ship can provide the timely initial surgical capacity required by amphibious forces.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps strongly supports the TAH program.



## NAVY FLEET HOSPITALS

DESCRIPTION: Fleet Hospitals are modular, rapidly erectable, relocatable medical facilities for treatment of both Navy and Marine Corps wounded. This Navy Program provides both Combat Zone (CBTZ) and Communication Zone (COMMZ) facilities of varying sizes for a balance of mobility, flexibility, and levels of care. Fleet Hospitals will receive patients from amphibious task force ships, directly from medical units organic to Marine forces, and from hospital ships. Fleet Hospitals can be staged in CONUS or prepositioned either afloat or overseas in advance of hostilities. The total program calls for 23 hospitals. The first 1500 beds (two 500-bed and two 250-bed Combat Zone Hospitals) will be delivered during FY87.

<u>PROCUREMENT</u> <u>PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>	<u>FY90</u>
	(3)CBTZ 250-bed		(3)COMMZ 500-bed		(1)COMMZ 500-bed	(3)COMMZ 500-bed
	(6)CBTZ 500-bed	(1)COMMZ 500-bed		(3)COMMZ 1,000-bed	(1)COMMZ 1000-bed	
	(1)COMMZ 1,000-bed		(1)CBTZ 500-bed			
	(10) 4,750 beds	(1) 500 beds	(4) 2,000 beds	(3) 3,000 beds	(2) 1,500 beds	(3) 1500 beds

TOTAL 13,250 BEDS

WHY IS IT IMPORTANT?: Fleet Hospitals will provide rapid treatment in-theater to save lives, reduce morbidity and maximize returns to duty.

WHAT IS THE MARINE CORPS POSITION?: Rapidly deployable Fleet Hospitals, like hospital ships and medical battalions, are an integral part of the Naval theater medical support structure and continuum of care. All elements of the continuum are needed to sustain combat operations.

## ADVANCE BASE FUNCTIONAL COMPONENTS (ABFC)

DESCRIPTION: A medical or dental ABFC is a grouping of materiel and personnel designed to provide support to an advance base, to augment existing facilities, or to add capabilities that otherwise were not available.

WHY IS IT IMPORTANT? ABFCs provide additional shore-based medical and dental support, available to the FMF, in or adjacent to the beachhead. It must be emphasized that ABFCs are not pre-assembled and held in stock for immediate issue. Use of ABFCs requires allowance of sufficient lead time for funding, procurement, assembly, training and transportation. Medical/dental ABFCs are listed below.

Fleet Hospital (Communication Zone)	500-Bed
Fleet Hospital (Combat Zone)	500-Bed
Fleet Hospital (Combat Zone)	250-Bed
Station Hospital (Expeditionary)	100-Bed
Clinic (Expeditionary)	25-Bed
Clinic (Expeditionary) First Aid/Outpatient	
Hospital - 60-Bed Mobile (Tents) (Capable of Helo lift or Fly-away)	
Surgical Suite Supplement (Expeditionary)	
Casualty Receiving Unit (Expeditionary)	
Blood Bank (Liquid) (Expeditionary)	
Whole Blood (Liquid) (Expeditionary)	
Preventive Medicine Unit (Expeditionary)	
Ophthalmic Service Unit (Expeditionary)	
Dispensary 10-Bed, Mobile	
Casualty Staging Unit (Expeditionary)	
Dental Component Mobile	
Dental Prosthetic Component, Mobile	
Dental Clinic, Small (Expeditionary)	

WHAT IS THE MARINE CORPS' POSITION? The Marine Corps supports the ABFC as a critical medical support enhancement for the FMF.





## SECTION VI

### THE MARINE CORPS RESERVE

#### TOTAL FORCE AND THE RESERVE'S VITAL CONTRIBUTION

The Marine Corps Reserve was established by an Act of Congress and signed into law by President Woodrow Wilson on August 29, 1916. A full partner in the nation's premier force in readiness, it has been carefully developed as a reserve in the classical sense. With trained units and qualified individuals on call to rapidly augment and reinforce active forces, the Reserve provides our Corps with a valuable added dimension.

Active force capabilities in the Marine Corps are primarily determined by the responsiveness and deployability required of three active MAFs. In this context, requirements for regular manpower are driven by peacetime commitments, forward deployments, rapid deployment criteria, and the need for a rotation base. In broad terms, the Reserve complements this force with a capability to rapidly expand structure by one third and increase trained manpower by one half. Considered as a total force, 25 percent of the combat structure and 33 percent of the trained manpower are in the Reserve.

The Selected Marine Corps Reserve (SMCR) contributes trained units, which are organized into the 4th Marine Division, 4th Marine Aircraft Wing, and 4th FSSG. In addition to nine infantry battalions and 18 flying squadrons, these organizations represent 100 percent of the Marine civil affairs capability, 67 percent of force reconnaissance units, 40 percent of the tanks, and much more. Their role upon mobilization will be to:

- Selectively augment the active forces in order to field the three active MAF's at full wartime structure.
- Reinforce the active MAFs with selected units if warranted by threat assessment.
- Provide capability to reinforce with an additional MAB.
- Provide a full division, wing and FSSG, if "augment/reinforce" is not ordered.
- If "augment/reinforce" is ordered, provide a nucleus to reconstitute a full division, wing, and FSSG.

## STATUS OF PROGRAM

### Budget

Funding profiles for the Marine Corps Reserve have paralleled the tempo of change. Increases in both reserve appropriations (Reserve Procurement, Marine Corps - RPMC, and Operation and Maintenance, Marine Corps Reserve - O&MMCR) have contributed to increased training, increased readiness, and enhanced mobilization capabilities.

The FY86 Reserve budget request of \$351.6 million will support both enhancement initiatives and an SMCR end strength of 43,019 (41,900 average strength). This funding represents 4.0 percent of the overall Marine Corps budget, and a real growth of 1.5 percent.

Significant items in the FY86 O&MMCR request include \$1.6 million for improved chemical protective suits, \$1.3 million for improvements to the Reserve Component Common Personnel Data System, \$1.0 million for the new Kevlar helmet, and \$0.9 million for lightweight body armor.

### Manpower

From a manpower perspective, the Marine Corps Reserve is a vastly improved force over that of the past decade. One significant improvement has been management of the IRR, the primary source of trained individuals for both active and reserve units upon mobilization. An effective mobilization assignment system and advancements in preassignment programs have been major factors in this development. At the end of 1984, there were over 48,000 Marines in the IRR. By 1990, when the full impact of the military service obligation extension from 6 to 8 years is felt, this number is expected to eventually level at 85,000. A major challenge is continued development of this group of individuals as a viable manpower resource through refresher training, enhanced administration capabilities, and improved mobilization techniques.

A new manpower plan has been developed which calls for modest and achievable growth in the SMCR, averaging 1200 per year. While the plan has been revised, the goal of achieving full Reserve wartime strength by 1990 is the same, and in actuality SMCR strength has increased by approximately 5,000 since 1980.

While the great majority of SMCR individuals train in reserve combat units, there is a program which places drilling Marines on staffs within the active supporting establishment and provides manning for 52 mobilization stations across the country. These mobilization stations are critical to the process of rapidly assimilating the IRR upon mobilization. Referred to as Individual Mobilization Augmentees, these drilling reservists are becoming key elements of organizations, as evidenced when they assisted in manning the Marine Corps Command Center during the Grenada operation.

## Material and Logistics

Modern combat equipment and material readiness are essential in establishing an effective wartime capability. As an integral part of the Total Force, equipment modernization for the Reserve is facilitated by a single acquisition objective which considers both reserve and active requirements. This acquisition objective addresses equipment modernization and includes initial issue quantities for all reserve units, as well as planned sustainability for designated early deploying units through D+60.

While the Marine Corps has always included the Reserve in developing this single acquisition objective, equipment fielding in the Reserve has usually lagged active forces. Funding levels of the past four years have finally allowed concurrent fielding. The result is an improved capability to provide trained individuals and units to meet mobilization requirements, conduct realistic training with equipment reservists are likely to go to war with, and integrate effectively with active forces in exercises and actual contingencies.

### TRAINING AND READINESS

Essential for a ready ground and air structure is the combination of manpower and equipment into an effective training program. Active/reserve integration is the dominant theme, and efforts are directed in three areas: collective training with emphasis on unit performance within a MAGTF, professional development, education, and specialized skill training.

For units as well as individuals, the same expertise and proficiency in command and control, fire support coordination, amphibious planning, and fire and maneuver expected of the active force is also expected of the Reserve. These skills are continually refined through exercise participation. A cycle of training is maintained which includes, among others, combined arms exercises, cold weather training, and amphibious landings. Reserve units are routinely assessed with the same criteria used to evaluate active force combat capability. While the results of these tests are primarily intended for the use of unit commanders, insight as to the success of training programs can be gained by comparing evaluated readiness between 1981 and 1984. Of units tested both years, 54 percent were judged combat ready in 1981, while in 1984 all were assessed as being combat ready.

In addition to tactical expertise, another aspect of reserve readiness is being prepared to mobilize. This facet is routinely assessed and exercised from an overall perspective by participation in JCS mobilization exercises. Complementing this system at the unit level, the 4th Marine Division and 4th Marine Aircraft Wing conduct what is known as a Mobilization Operational Readiness Deployment Test (MORDT). Again, comparing MORDT results of 1981 and 1984 is particularly instructive. Of 95 different



units tested in both years, 81 percent were evaluated as being ready in 1981, while 94 percent were judged ready in 1984.

### CONCLUSION

The Marine Corps Reserve is a vital, added dimension to the Corps' Total Force. High morale and the dedication of its Marines are major strengths. Requirements to improve present and future capabilities have produced some crucial objectives, primarily in manpower and equipment. The approach towards achieving these objectives can be summarized in a three-pronged strategy.

First, to continue with substantial efforts in recruiting, training, and retaining quality Marines.

Second, the momentum of force modernization must continue. State-of-the-art equipment and modern training facilities are extremely important.

A final key to enhancing Reserve capabilities is continued emphasis on active/reserve integration.

Total Force, with separate but complementary active and reserve contributions, is a vital, established reality in the Marine Corps.

## SECTION VII

### TRAINING

In November of 1981, the Commandant established a separate Training Department on the Headquarters Staff to provide more effective management of Marine Corps training as a total system. The Training Department is chartered to develop policies and programs for the training and education of Regular and Reserve Marines. This responsibility includes:

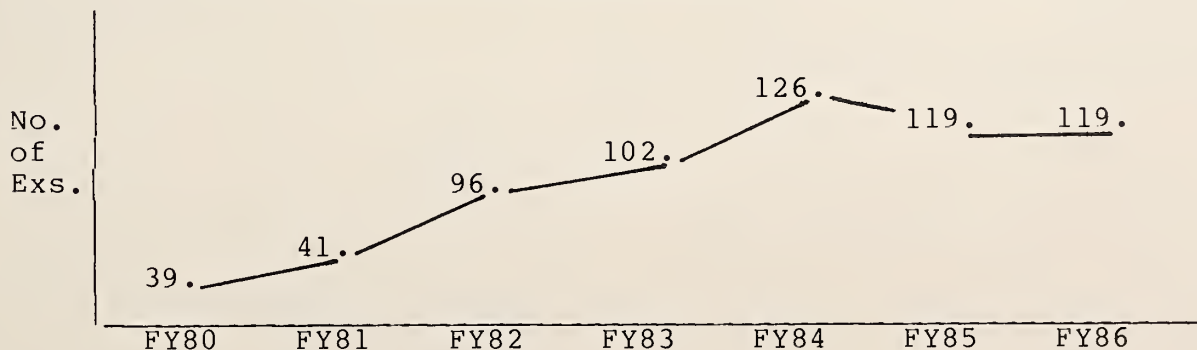
- Management and direction of training programs and initiatives.
- Analysis of training and publication/evaluation of collective and individual training standards for all categories of training conducted in Marine Corps units and institutions.
- Analysis of training resources to achieve maximum effectiveness and efficiency of training in the context of missions and standards.

The Marine Corps has adopted a training system based on the successful completion of established training standards, both collective and individual. Listed below are several recently published standards:

- Individual training standards have been published for tactical helicopter, observation fixed-wing, tactical fixed-wing, and support/administrative aircrews; and for the data processing occupational field.
- Collective training standards have been published for the Marine air command and control system, infantry units, and special operations (urban operations, amphibious raids, cold weather operations, etc.).

The implementation of this system requires that our training program continue to be performance and mission oriented, realistic, and innovative. The number of major exercises since 1980 in which the Marine Corps has participated has increased as indicated below:

MAJOR MARINE CORPS FIELD TRAINING EXERCISES  
(Regular and Reserve)



Not only has the number of exercises increased, but also the scope, duration and number of individual units/detachments participating in these exercises.

These exercises provide the Marine Corps with the opportunity to train under a variety of threat scenarios, environmental conditions, and locales in order to simulate combat conditions. Commanders are thereby able to evaluate their contingency plans, staff coordination, and command and control mechanisms, so necessary for future success on the battlefield.

The capability to effectively employ the Marine Corps Air-Ground Team in combat requires realistic training in the integration of all supporting arms. To this end, the Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, California, was established in October 1975 and given the mission of conducting air-ground combat training in order to exercise and evaluate the combined arms capabilities and readiness of all elements of MAGTFs.

A series of exercises designated "Combined Arms Exercises" (CAX's) has been developed to specifically support the accomplishment of MCAGCC's mission. The standard scenario presupposes an enemy equipped with current Soviet weapons and employing Soviet doctrine. Although the sequence and circumstances vary, standard events for a CAX are: (1) at least two command post displacements; (2) at least three attacks on objectives requiring complete combined arms fire support; (3) a night helicopterborne assault of company size; (4) development of barrier and defensive fire plans.

Approximately 10 battalion-size or larger units deploy to MCAGCC to conduct combined arms exercises each year. The harshness and expansiveness of the Mojave Desert provide the challenge and maneuver area to permit the full integration of live ordnance of all combined arms into the exercise. Lessons learned from the combined arms exercises are regularly incorporated into the latest developments in doctrine, tactics and equipment.

The Marine Corps Mountain Warfare Training Center (MCMWTC) in Bridgeport, CA, provides an ideal location to train for our strategic roles in northern Europe and western Pacific regions regarding mountainous terrain and cold weather environment. We train approximately 14,000 Marines each year at the MCMWTC, including nine regular battalions and one reserve battalion.

We also train regularly with our Allied counterparts around the world. Each year, Marines participate in joint or combined training exercises such as Teamwork, Northern Wedding/ Bold Guard, Bright Star, Big Pine, Team Spirit, Kangaroo and Display Determination. These training exercises have been unqualified successes and have contributed significantly to the strength of the Marine Corps and our continued affiliation with our allies.



The Marine Aviation Weapons and Tactics Squadron-One (MAWTS-1) at Yuma, Arizona provides standardized advanced training in all aspects of the employment of Marine aviation. MAWTS-1 conducts the semiannual Weapons and Tactics Instructor (WTI) courses which provide extensive training for 140 aircrews and aviation command and control officers each year. These officers return to their units and establish a cadre of expertise for unit training programs. In addition, MAWTS-1 provides training for over 3,000 Wing personnel in supplemental courses each year.

Recruit training remains the fundamental element of our success and is the first step in a program designed to prepare the individual Marine for combat or garrison duty. Recruit training provides a series of demanding but attainable performance requirements with which each recruit can identify and master. We require the highest standards from our Drill Instructors and accept no deviation from these standards. With the Commandant's continuous personal attention, recruit attrition through the 3rd Quarter, FY85 was 13.6 percent; it was slightly lower during FY84 at 13.1 percent, continuing a downward trend which began in FY82 when attrition peaked at 16.4 percent.

These are but a few of the items and support elements which make up our training system. This section presents eight issues of importance to the development of the Marine Corps training program.



COMPUTER ASSISTED SYSTEMS APPROACH TO TRAINING  
(Formerly Computer Assisted Instructional Systems Development)

DESCRIPTION: The Systems Approach to Training (SAT) process provides the framework within which Marine Corps training is developed, implemented and evaluated. The Marine Corps SAT process is based upon instructional systems development (ISD). The SAT process analyzes training requirements, translates these requirements into training objectives, selects the proper training strategy, develops effective training delivery systems, and provides quality control. It is a systematic, but flexible tool that ensures Marines acquire the knowledge and skills needed to accomplish the mission. The goal is to achieve the maximum return on training resource investment by improving on-the-job performance and reducing that investment where possible. Computer Assisted Systems Approach to Training (CASAT) is being developed so that the Marine Corps can carry out the SAT process in a timely and cost-effective manner.

<u>FUNDING PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>
(\$ Millions)	0.51	0.40	0.26

WHY IS IT IMPORTANT? CASAT will facilitate the collection and processing of data from Marines in the field. It will:

- Assist in the analysis of this data by identifying which tasks are performed, by whom, where, the relative time spent in performance, the task difficulty, the training emphasis and the commonality of tasks among military occupational specialties (MOSS) and similar units.
- Prioritize the tasks based on specified criteria.
- Recommend instructional settings based on cost data and task priority.
- Facilitate the drafting and publishing of training standards by providing multiple formats and ease of update.
- Facilitate the revision and maintenance of published training standards.
- Evaluate student mastery at the training site, as well as student effectiveness in the field.
- Through automation, trends can be identified and tracked and optimal solutions can be sought.

WHAT IS THE MARINE CORPS POSITION? CASAT will be developed for implementation at Headquarters, Marine Corps.

DEVELOPER/MANUFACTURER: Contract for design and development has been awarded to the Computer Sciences Corporation through the General Services Administration-Interagency Data Systems Facility (GSA-IDSF) located in Huntsville, AL.



## TRAINING REQUIREMENTS AND RESOURCE MANAGEMENT SYSTEM

DESCRIPTION: The Training Requirements and Resource Management System (TRRMS) will be the primary training information management system in the Marine Corps. TRRMS will consist of a centralized training information data base that will provide critical data analysis so that training requirements can be correlated with training resources. TRRMS will provide better projections of training requirements and improve reporting capabilities to DOD, Congress, and other government agencies. TRRMS will be utilized at the HQMC level.

<u>FUNDING PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>
(\$ Millions)	0.26	0.26	1.61

WHY IS IT IMPORTANT? TRRMS will provide HQMC managers with ready access to accurate and timely data which will result in improved manning of operational forces and improved retention in the career force. TRRMS will reduce the shortfalls in trained personnel due to inefficient use of available training resources. The reduction of unfilled school seats will result in a more balanced MOS structure. The decision-making process will improve as this detailed information is made available to decision makers.

WHAT IS THE MARINE CORPS POSITION? TRRMS will be developed for implementation at HQMC.

DEVELOPER/MANUFACTURER: The Management Information Instructional Systems Activity (MIISA), under the control of the Chief of Naval Education and Training (CNET), is conducting the development, design, and implementation of TRRMS.



## INSTRUCTIONAL MANAGEMENT SYSTEM

DESCRIPTION: The Instructional Management System (IMS) is a new system that represents a major enhancement in training management throughout the Marine Corps' formal schools. IMS will provide the formal schools with the capability of tracking and monitoring student progress and performance; scheduling and management of training resources (equipment, classrooms, instructors, etc.); creating and updating programs of instruction (POIs), lesson plans and other course materials; and developing test materials and analyzing test results. IMS will also provide word processing equipment for Marine Corps formal schools. IMS will enable the efficient supervision and evaluation of courses of instruction at over 40 Marine Corps formal schools. At the HQMC level, IMS will result in more efficient training management information for decision-makers.

<u>FUNDING PROFILE:</u>		<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
(\$ Millions)	(RDT&E)	2.02	1.12	-	-
	(PMC)		3.66	0.30	-
	(O&MMC)			2.42	2.37

WHY IS IT IMPORTANT? The IMS will enhance instructor productivity in the formal schools. IMS will enable student load increases without a corresponding increase in direct overhead support, and will reduce the time spent in labor-intensive administrative functions. IMS will result in a more efficient utilization of available training resources and will improve training management throughout the Marine Corps.

A prototype system was fielded in October 1984 at Camp Lejeune, NC and Quantico, VA for field testing at selected Marine Corps formal schools. Evaluation of the prototype will continue through 1985.

WHAT IS THE MARINE CORPS POSITION? Procurement of the IMS will take place in FY86. A phased implementation will begin in FY86 with the initial site activations.

CONTRACTOR: Veda Inc. (prototype)

## TACTICAL DECISION MAKING AIDS

DESCRIPTION: The Marine Corps has fielded and is continuing to develop a variety of Tactical Decision Making (TACDM) training materials and simulators to complement traditional training in the FMF and formal schools.

The Tactical Warfare Simulation, Evaluation and Analysis System-Integrated Maneuver Controller (TWSEAS-IMC) project will provide a fourth suite of equipment, currently planned for III MAF, along with new software that will more closely simulate ground combat operations as well as include the range of air, combat support and combat service support operations. The TWSEAS-IMC will be capable of controlling integrated field and map exercises for FMF units or executing four simultaneous Combat Post Exercises for formal schools.

The manual war game effort has produced and fielded TACWAR, the company level system and the prototype of STEELTHRUST, the battalion level game. The final version of STEELTHRUST will be fielded in FY86, as will TANKER and TRAINING MANAGEMENT. Follow-on development will include amphibious variants of TACWAR and STEELTHRUST, additional variants of TACWAR and an RLT/MAB training system.

Tactical Training Situation (TACTRASITS) exercise pamphlets are materials which can be used for self-paced or group study to prepare battalion squadron through MAF-level staffs for exercises or execution of specific operations/contingency plans.

A Combined Arms Staff Trainer (CAST) is being developed to support fire support planning and coordination training. The CAST will consist of a terrain model of the CAX exercise area, a precise target designation system and a communications system to replicate tactical communication nets to support a MAB-level exercise.

<u>PROCUREMENT PROFILE:</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
TWSEAS-IMC			X	
STEELTHRUST	X			
TANKER	X			
TRAINING MANAGEMENT	X			
STEELTHRUST AMPHIB		X		
TACWAR VARIANTS		X	X	X
LANDING FORCE (RLT)			X	
CAST			X	
TACTRASITS	X	X	X	X

WHY IS IT IMPORTANT? Each simulator or training package provides the commander with an alternative method of training and exercising his subordinate commanders and staff in planning, controlling, and executing critical combat functions

WHAT IS THE MARINE CORPS POSITION? The Marine Corps supports TACDM training at all levels. The TACDM training aids enhance traditional formal school and unit training.

## TRAINING RANGE DEVELOPMENT

DESCRIPTION: The Marine Corps is continually reviewing training ranges with the goal of providing the best training possible to our Marines. With this mind, we are now developing two Multi-purpose Range Complexes, one at Camp Pendleton, California and another at MCAGCC, Twentynine Palms, California. These ranges are a multi-million dollar development which will incorporate a vast array of computer-controlled targets for infantry, armor, antiarmor, and aviation units. The targets will be both stationary and moving, fully automated, self-scoring, and programmable for any number of differing scenarios. When completed, these ranges will provide the Marine Corps with state-of-the-art training facilities in support of precision gunnery training for a variety of direct fire weapons. Ranges of similar function, but limited scope, are planned for Camp Lejeune, Camp Butler, and Hawaii. POM initiatives for facilities to train in military operations in urban terrain (MOUT) have been submitted for Camp Lejeune.

<u>FUNDING PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
(\$ Millions)	1.0	1.9		13.1

WHY IS IT IMPORTANT? Force modernization has highlighted the need to incorporate modern training range development with the fielding of powerful new weapon systems. The development of ranges that maximize the training value received from ammunition expended are of significant congressional interest. The MOUT facility provides a unique environment for training in urban warfare.

WHAT IS THE MARINE CORPS POSITION? The Marine Corps range development effort parallels a similar Army effort which is in excess of 100 million dollars. Additionally, training ranges/facilities must receive sufficient funds to meet individual and collective training standards for each weapon system.

DEVELOPER/MANUFACTURER: The Marine Corps, in conjunction with Army Corps of Engineers and Naval Facilities, San Bruno, California, is developing the Multipurpose Range Complexes.



## WEAPON/EQUIPMENT SIMULATION DEVICES

DESCRIPTION: These devices provide realistic substitutes for operating actual equipment, weapons, and ammunition.

- Precision Gunnery Training System (PGTS). PGTS is a device which enables the gunner to practice tracking skills when firing wire-guided missiles.
- Light Assault Vehicle (LAV). A gunnery training system being developed to provide conduct of fire and precision gunnery simulation for the LAV.
- STAGS MK-19. A computer based simulation developed to provide precision gunnery training for the MK-19, 40mm machinegun.
- Small Arms Remote Targets (SARTS). SARTS are electronic remote-controlled targets for small arms.
- Remoted Engagement Target System (RETS). A controlled system of moving and stationary personnel and antiarmor targets to provide target array and gunnery effect.
- Simulated Laser Targets (SLT). SLT simulates laser-designated targets for laser guided ordnance.
- Forward Anti-Air Defense Trainer (FAAD). FAAD is a precision gunnery training simulator for Stinger gunners.
- Maintenance Trainers. Computer based simulators which provide scenarios for maintenance problem diagnosis and emergency action procedures for motor transport, engineering, and electronic equipment.

<u>PROCUREMENT PROFILE</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
PGTS				40
LAV				
STAGS (MK-19)				
SARTS		200	200	200
RETS		2		
SLT	15	15		
FAAD		2		
Maintenance Trainers	12	58	16	

WHY ARE THEY IMPORTANT? Weapon/equipment simulation devices allow Marines to develop skills in some parts of their assigned specialty before transitioning to full task training with real equipment or live ordnance. This not only saves costs associated with equipment wear and weapons live-firing, but also reduces pressure on ranges, and allows Marines to repetitively practice critical tasks quickly and safely.

WHAT IS THE MARINE CORPS POSITION? Combine development efforts with the technology of commercially available trainers to field training devices that enhance the first round hit/kill probability of Marine gunners and gun crews.

## DEVELOPMENT OF INDIVIDUAL TRAINING STANDARDS

DESCRIPTION: Individual training standards are measures of job performance used to determine who can and cannot perform satisfactorily. They describe what an individual is supposed to do in order to perform a job successfully. Individual training standards constitute the basis for design, development, implementation, and evaluation of all individual training conducted in units and institutions. In addition, training standards can be used by the commander to determine proficiency, evaluate individual training, allocate training resources and maintain quality control.

<u>FUNDING PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>	<u>FY89</u>
(\$ Millions)	0.21	0.35	0.27	0.34	0.47

### WHY IS IT IMPORTANT?

- Provides means to evaluate training.
- Standardizes acceptable level of performance.
- Eliminates unnecessary training.
- Enables efficient allocation of training resources.
- Ensures that all tasks needed for satisfactory performance are identified.
- Saves time of unit and school commanders.
- Enables assignment of responsibility for training to units or institutions.
- Avoids duplication of effort by units and institutions.
- Enables validation of occupational field structure.

WHAT IS THE MARINE CORPS POSITION? Individual training standards are being developed by CMC (Code T).

DEVELOPER/MANUFACTURER: Eagle Technology and Allen Corporation

## COMBAT ENVIRONMENT SIMULATION DEVICES

DESCRIPTION: Training devices which complement the effectiveness of training by simulating live fire engagement of opposing weapon systems.

Multiple Integrated Laser Engagement System (MILES). MILES is an eye safe, laser transmitting system.

Air Ground Engagement System (AGES). AGES is a MILES adaption for the Cobra and Huey helicopters.

Ground Threat Radar Simulator (GTRS). GTRS simulates enemy communication jamming and other electromagnetic interference.

<u>PROCUREMENT PROFILE:</u>	<u>PRIOR</u>	<u>FY86</u>	<u>FY87</u>	<u>FY88</u>
(\$ Millions)				
MILES				6.1
AGES			2.00 (24)	2.16 (24)
GTRS	.72(8)			

WHY ARE THEY IMPORTANT? Combat environment simulation devices add realism to training exercises and allow Marines to experience those situations which closely resemble the conditions under which they will fight. Peacetime validation of doctrine, tactics, and techniques is a natural consequence of utilization of such devices.

WHAT IS THE MARINE CORPS POSITION? Continue to develop and procure combat environment simulation devices to enhance training and provide feedback for the continuous development of doctrine, tactics, and techniques.





# MARINE CORPS TACTICAL FORCE ORGANIZATION

Fleet Marine Forces are comprised of ground, air, combat support, and combat service support (CSS) units that are routinely task organized into Marine Air-Ground Task Forces (MAGTFs) for both training exercises and deployments. Marine Corps policy is that Fleet Marine Forces will be employed as integrated air-ground task forces tailored to accomplish specific missions. Regardless of the size of the MAGTF, it will include four major components:

- Command Element, (CE)
- Ground Combat Element, (GCE)
- Aviation Combat Element, (ACE)
- Combat Service Support Element, (CSSE)

There are three basic types of MAGTFs. The Marine Amphibious Force (MAF) is the largest of the MAGTFs, and is normally built around a division/wing team. However, it may range in size from less than a complete division/ wing team up to several divisions and aircraft wings, together with an appropriate combat service support organization. The MAF is commanded by either a major general or a lieutenant general, depending on its size and mission. It is capable of conducting a wide range of amphibious assault operations and sustained operations ashore, and can be tailored for a wide variety of combat missions in any geographic environment. A MAF is deployed in three stages. The first and largest is the Assault Echelon (AE). Second is the Assault Follow-On Echelon (AFOE). Finally, the Fly-In Echelon (FIE) arrives and the MAF, consisting of over 52,000 Marines and sailors, is complete. A notional task organization for the MAF is displayed in Figure 1.

## MARINE AMPHIBIOUS FORCE (MAF)

<u>FORCE HEADQUARTERS</u>		<u>PERSONNEL</u>	
		USMC	49,700
		USN	2,600
<u>MARINE AIRCRAFT WING (MAW)</u>		<u>REINFORCED DIVISION</u>	
<u>FORCE SERVICE SUPPORT GROUP (FSSG)</u>			
<u>AIRCRAFT/MISSILES</u>		<u>MAJOR GROUND WEAPONS SYSTEMS</u>	
AV-8/A-4	60 CH-46	70 TANKS	
F-4/F-18	32 CH-53A/D	72 81MM MORTARS	90 155MM HOW
A-6	16 CH-53E	288 DRAGON TRACKERS	18 155MM HOW(SP)
EA-6	24 UH-1	144 TOW LAUNCHERS	12 8" HOW(SP)
RF-4B	24 HAWK LAUNCHERS	601 M-60 MG	81 60MM MORTARS
OV-10	75 STINGER TEAMS	435 .50 CAL MG	147 LAV
KC-130	24 AH-1	208 AAV	345 MK-19 GRENADE LAUNCHERS
TA-4/OA-4			

FIGURE 1

The Marine Amphibious Brigade (MAB) is the second basic type of MAGTF and is a task organization which is normally built around a reinforced infantry regiment and a composite Marine aircraft group. It is normally commanded by a brigadier general and is capable of conducting amphibious assault operations of limited scope. During potential crisis situations, a MAB may be forward deployed afloat for an extended period to provide immediate response and may serve as the precursor of a larger force. Under these conditions, MAB combat operations may be supported from the sea base, facilities ashore, or a combination of the two. The MAB is deployed in three stages like a MAF. Most of the combat capability and Marine personnel are included in the assault echelon. A notional task organization for a MAB is displayed in Figure 2.

### MARINE AMPHIBIOUS BRIGADE (MAB)

<u>BRIGADE HEADQUARTERS</u>		<u>PERSONNEL</u> USMC 15,775 USN 880	
<u>MARINE AIRCRAFT GROUP (MAG)</u>		<u>REGIMENTAL LANDING TEAM (RLT)</u>	
<u>BRIGADE SERVICE SUPPORT GROUP (BSSG)</u>			
<u>AIRCRAFT/MISSILES</u>		<u>MAJOR GROUND WEAPONS SYSTEMS</u>	
0/19 AV-8B/A-4M	48 CH-46	17 TANKS	
24 F-4/F/A-18	20 CH-53 A/D	24 81MM MORTARS	24 155MM HOW (T)
10 A-6E	8 CH-53E	96 DRAGON TRACKERS	6 8" HOW (SP)
4 EA-6B	12 AH-1	48 TOW LAUNCHERS	27 60MM MORTARS
4 RF-4B	12 UH-1	255 M-60 MG	138 .50 CAL MG
6 OV-10	6 HAWK LAUNCHERS	47 AAV	6 155 MM HOW (SP)
8 KC-130	15 STINGER TEAMS	114 MK-19 GRENADE LAUNCHERS	36 LAV
5 OA-4M			

FIGURE 2

The Marine Amphibious Unit (MAU) is a task organization which is normally built around a reinforced infantry battalion and a composite squadron. It is normally commanded by a colonel and employed to fulfill routine forward afloat deployment requirements. The MAU provides an immediate reaction capability to crisis situations and is capable of relatively limited combat operations. Because of its comparatively limited sustainability, it is not envisioned that a MAU will routinely conduct amphibious assaults. When committed ashore, a MAU is normally supported from its sea base. A MAU is considered to be the forward afloat deployed element of a larger landing force, which would be constituted as required from CONUS or forward based combat ready Fleet Marine Forces. A notional task organization for a MAU is displayed in Figure 3.



# MARINE AMPHIBIOUS UNIT (MAU)

<u>HEADQUARTERS</u>		<u>PERSONNEL</u>	
		USMC	1,900
		USN	100
<u>COMPOSITE SQUADRON</u>		<u>BATTALION</u>	
		<u>LANDING TEAM</u>	
<u>MAU SERVICE SUPPORT GROUP</u>		<u>MAJOR GROUND WEAPONS SYSTEMS</u>	
<u>AIRCRAFT/MISSILES</u>			
6	AV-8	5	TANKS
12	CH-46	8	81MM MORTARS
4	CH-53D/E	32	DRAGON TRACKERS
2	CH-53E	8	TOW LAUNCHERS
4	AH-1	12	AAV
2	UH-1		
5	STINGER TEAMS		
		8	155MM HOW
		9	60MM MORTA
		20	50 CAL MG
		60	M60 MG
		26	MK-19 GREN
			LAUNCHERS

FIGURE 3

The MAGTF is a tailored combined arms organization. Separate employment of MAGTF elements under another command structure is contrary to Marine Corps policy. To do so is to fragment combat power, cause tactical and logistical supportability to become questionable, and reduce overall combat effectiveness.

MAGTFs organized for amphibious operations deploy as the landing force aboard amphibious task force shipping. MAGTFs are also deployed for rapid response or reinforcing roles by means of tactical or strategic air or sealift. MAGTFs may be formed and deployed for combat, contingency deployments, and training exercises, and may be committed to combat from contingency deployments.

1985 CONCEPTS AND ISSUES DISTRIBUTION

FMFPAC		20
FMFLANT		20
FMFEUR		20
CG 1ST MARDIV		50
CG 2ND MARDIV		50
CG 3RD MARDIV		50
CG 4TH MARDIV		50
CG 1ST MAW		50
CG 2ND MAW		50
CG 3RD MAW		50
CG 4TH MAW		50
CG 1ST FSSG		50
CG 2ND FSSG		50
CG 3RD FSSG		50
CG 4TH FSSG		50
CG MCLSB LANT		10
CG MCLSB PAC		10
CG 1ST MAB		10
CG 4TH MAB		10
CG 5TH MAB		10
CG 6TH MAB		10
CG 7TH MAB		10
CG 9TH MAB		10
CG MCAGCC		10
CG I MAF		10
CG II MAF		10
CG III MAF		10
CG PENDLETON		40
CG LEJEUNE		40
CG MCDEC		400
MC REPS/LNO (1 each)		120
HQMC		420
AVN	40	
MPR	20	
I&L	40	
PP&O	40	
TRNG	10	
RD&S	10	
INT	10	
RESAFF	10	
FD	10	
JAD	2	
C <sup>4</sup>	20	
CL	2	
MED	2	
PA	4	
OLA	200	
Gen Off Personals		460
Files		100





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